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AMERICAN
DYESTUFF REPORTER
DEVOTED TO TEXTILE WET-PROCESSING

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VOLUME 49 SEPTEMBER 19, 1960 NUMBER 19

AATCC CONVENTION ISSUE

aatcc proceedings

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Typical of the newest fashion browns, the original colors as well as the tailored lines of this ensemble were designed by

Bill Atkinson

for Glen of Michigan.

Subtle variations of soft, golden-country-life tones are currently coming to the fore.

To reproduce them on cellulosic fibers . . . with outstanding wash-and-light fastness . . . we recommend our Carbanthrene® Vat Dyes. Because of their uniform, fine particle-size, these superior American-made vats disperse evenly to give you clean level results, consistent from batch to batch. Waste and redyes are minimized and dye yields are improved.

The Carbanthrenes listed below are among those presently proving most useful to dyers of cottons, rayons and blends.

For the newest brown shades on other fibers, whatever fastness and working properties are required, let our nearest office suggest economical formulations based on National® Dyes

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Proceedings of the

American Association of Textile Chemists and Colorists

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September 19, 1960 No. 19

"New Fibers—New Blends—New Fabrics"

1960 AATCC CONVENTION

October 6, 7, 8 • Sheraton Hotel, Philadelphia, Pa

Sponsored by the Delaware Valley Section

WELDON G HELMUS
President

Come to the 1960 Convention!

OUR host, the Philadelphia Convention Committee, has labored hard and long to arrange for you an outstanding technical program, coupled with entertainment features and events of special interest. The exhibits presented by some of the leading companies will offer new and valuable applications to textile science and technology.

For those who have attended conventions sponsored by the Delaware Valley Section, they will recognize a special brand of hospitality. Those attending an AATCC Convention for the first time will long remember this history-making occasion.

AATCC Conventions are a vital part of the life of the textile industry. They renew the vigor of our Association in bringing together annually some 2,000 of our members who assemble for the purpose of increasing their knowledge of the science and technology of textiles. The changing convention location from year to year enables our members to become better acquainted with local conditions throughout the country and to broaden their view of the national character of our Association and our industry. No one can experience the full benefit of their AATCC membership unless he attends conventions regularly.

I also urge members to bring their wives. The Ladies Committee is prepared to extend a cordial welcome to them.

Don't miss the Philadelphia Convention! It is a good investment for you and your company.

WELDON G HELMUS
President

Greetings
FROM THE VICE PRESIDENTS

W GEORGE PARKS
Vice President
New England Region

WILLIAM S SOLLENBERGER
Vice President
Central Atlantic Region

A HENRY GAEDE
Vice President
Southern Region

JOSEPH H JONES
Vice President
Western Region

NEW ENGLAND REGION

THE Convention this year will be held in Philadelphia, Pennsylvania. The Committee has prepared an excellent program for both men and ladies. There is no reason why this Convention should not be an outstanding event in the development and progress of our Association. The City of Philadelphia played an important part in the early history of the United States. Benjamin Franklin, Betsy Ross and others established numerous traditions that are carried on in the City of Brotherly Love. They will provide pleasure to those who attend the Convention. There is an interesting museum, an art gallery and numerous buildings available for inspection. It is believed that in addition to the scientific and technical stimulation, adequate entertainment will also be available.

I wish to extend greetings from the New England Region to all members of the AATCC and urge that they attend the Convention in Philadelphia, 6-8 October 1960. The textile industry in the New England Region has played a most important part in the economic development of the United States. It is with this realization that we from the New England Region are anticipating meeting with you in Philadelphia.

W GEORGE PARKS
Vice President
(New England Region)

CENTRAL ATLANTIC REGION

THE Delaware Valley Section and Central Atlantic Region are making every effort to insure the 1960 Convention an interesting and memorable occasion which you won't want to miss. Having been associated with the Convention's Executive Committee and Technical Program Committee, I know that you will find the exhibits, technical meetings and personal associations stimulating and rewarding. The ladies will enjoy the activities planned for them and will find Philadelphia a most interesting city to visit.

On behalf of the Central Atlantic Region it is my pleasure to extend a hearty invitation to join us at the 1960 Convention. We look forward to welcoming you to Philadelphia."

W S SOLLENBERGER
Vice President
(Central Atlantic Region)

SOUTHERN REGION

"NEW Fibers—New Blends—New Fabrics", slogan of this year's Convention, challenges today's textile chemist and dyer. Members of the Southern Region accept the challenge and, by their participation in Philadelphia, will contribute to the solution of the problems it poses. The outstanding technical papers to be presented and the opportunity for discussion with our colleagues require our attendance.

Aside from the business aspects of the Convention, historic Philadelphia has much to offer the new visitor and presents the old one with an opportunity for rededication at the shrine of American liberty.

The South, source of America's fibers and fabrics, will send its members to Philadelphia to learn, to consult, to inform. Success to the Delaware Valley Section!

A HENRY GAEDE
Vice President
(Southern Region)

WESTERN REGION

THE Western Region will be well represented at the 1960 Convention. If you cannot be present, this, and subsequent issues of AATCC's Proceedings in *American Dyestuff Reporter* will bring the convention directly to you.

Thereis no substitute, however, for attending an AATCC Convention, and I urge all members of the Mid-West, Pacific Southwest and Pacific Northwest Sections to be with us in Philadelphia, October 6-8.

A series of excellent technical papers will be presented. It will be to your professional advantage to hear them. One paper will feature a unique closed-circuit color television, permitting you to direct a question and receive an answer from the person on the screen. This and other recent technological developments combine to make this convention a "must".

You will meet friends and business associates from the Western Region you would not ordinarily see due to the large area covered by our Region. This is your opportunity to take part in AATCC's biggest event of the year.

JOSEPH H JONES
Vice President
(Western Region)

Greetings

FROM THE CONVENTION CHAIRMEN

FRED V TRAUT
Convention Chairman

WM H BERTOLET III
Convention Cochairman

THIS convention promises to be one of the finest ever held by the Association. The Committee has done everything possible to provide for your interest and comfort during your stay. Headquarters for the convention are at the Sheraton Hotel and all official functions will be held there. In addition there are facilities at the Warwick and Drake Hotels—two of Philadelphia's finest—to accommodate you.

This year we are placing great emphasis on the technical program. The Technical Program Committee has worked hard on the theme "New Fibers, New Blends, New Fabrics" with emphasis on dyeing and finishing, and we know it will be most informative. As part of the program there will be a new medium of presentation known as Eidophor, which is a colored television, and we feel certain that you will find that part of the program most interesting.

The Intersectional Contest has been moved to a more prominent spot to focus the attention on it which it deserves.

There will also be a well-rounded group of exhibitors, who will present to you the latest developments in dyes, chemicals, laboratory and processing equipment and other services

Once again we will present an Awards' Luncheon, which will feature presentations to not only the Olney Medalist, but also to the Harold C Chapin and the Dyestuff Reporter Award winners. As usual, a banquet will conclude the program and the show which has been arranged for you will be of the highest caliber.

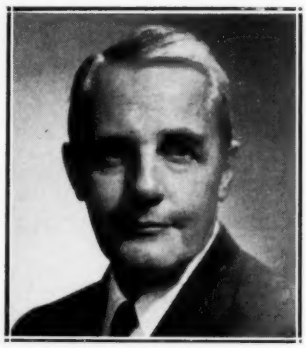
For the ladies there has been arranged a tour of Historic Philadelphia, which we know they will enjoy, and there also will be a reception and luncheon.

Arrangements have also been made to obtain tickets for the University of Pennsylvania-Princeton Football game, which will be played on Saturday afternoon, October 8th, at Franklin Field.

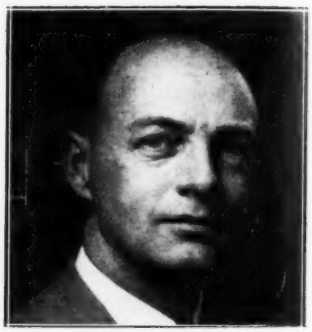
The Delaware Valley Section believes this convention will be something you will remember for many years and we look forward to greeting you.

FRED V TRAUT
Chairman
WM H BERTOLET
Co-chairman

CLARENCE A SEIBERT
Chairman
Delaware Valley Section



RICHARDSON DILWORTH
Mayor of Philadelphia



GEORGE P PAINE
Executive Secretary

Greetings
FROM THE CHAIRMAN, DELAWARE VALLEY SECTION

THE Delaware Valley Section extends its warmest invitation to all members of the American Association of Textile Chemists and Colorists to attend the 1960 Convention in Philadelphia, October 6, 7 and 8.

The Headquarters for the Convention will be in the Sheraton Hotel, the Quaker City's newest and finest, in the heart of Philadelphia, the city famous for its national historical background. We trust that every member will arrange to be present to share in the wonderful technical program planned and observe the many interesting exhibits on display.

The Convention Committee has worked incessantly to prepare a successful and thoroughly pleasant Convention for all.

We are looking forward to your attendance and participation in this 1960 Convention, which we are hoping will be one of the largest and most successful in the history of the AATCC.

CLARENCE A SEIBERT
Chairman, Delaware Valley Section

Greetings
FROM THE MAYOR OF PHILADELPHIA

LADIES and Gentlemen:

You will come to Philadelphia, I know, to consider matters connected with the textile industry, many of them of unusual complexity.

I hope, however, you can manage to take time from your deliberations to see something of our city, to soak up some of the peculiar charm of Philadelphia.

A great deal is happening here. We are in the midst of an enormous re-building program. Old areas are being razed to make way for new beautiful structures. Probably no city in America is changing so rapidly to meet the requirements of the times.

And yet, in spite of all the demolition and construction, Philadelphia has clung to its rich heritage from Colonial America. Some of the flavor of that age of wigs and knee breeches leavens the austere functionalism of our modern architecture.

This is Philadelphia's special quality—to be rich in tradition, and at the same time a leader in growth.

The city welcomes you and hopes you enjoy your stay.

RICHARDSON DILWORTH
Mayor, City of Philadelphia

Greetings
FROM THE EXECUTIVE SECRETARY

GREETINGS to AATCC members everywhere. You are cordially invited to attend the annual Convention in Philadelphia. This is your Convention. It is planned for you and put on for you. The Delaware Valley Section has thought of everything that will make it worth your while to be there.

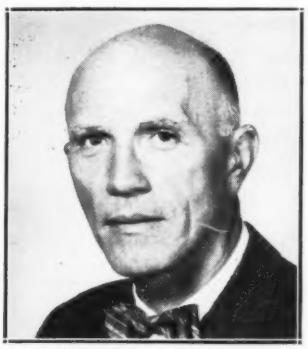
Each Convention is different from the last one, and each has its own special characteristics. That is why every AATCC Convention is a new and rewarding experience. It gives each member a chance to renew old friendships and make new ones. It provides an inspiration for new ideas. When it is over, every member will go home with more than he brought with him. He will return again the next year and the year after to replenish his storehouse of information.

Nonmembers will be welcome in Philadelphia. As a special inducement, they will be able to apply the nonmember registration fee to their first year of membership dues. The 1960 membership drive ends on Saturday, October 8th, at twelve noon. Membership applications received at Convention Headquarters will be counted in selecting the two winning Sections. Bring your friends!

GEORGE P PAINE
Executive Secretary

Greetings

FROM THE RESEARCH CHAIRMEN



CHARLES A SYLVESTER
Chairman
Executive Committee on Research

GEORGE S WHAM
Chairman
Technical Committee on Research

THE Convention theme, "New Fibers—New Blends—New Fabrics", parallels AATCC's research objective of keeping the textile industry abreast of new developments. This is one of AATCC's major responsibilities. To miss an AATCC Convention is to by-pass one of the most effective means of keeping currently informed.

Each year at Convention time, AATCC members join together in one large research committee to hear and discuss technical papers on a variety of subjects presented by leading authorities. Your Convention badge is your membership on that committee.

AATCC research is a continuing process of gathering and disseminating information for your benefit. In 1960, AATCC Research Committees have produced five new tentative test methods, revised three, and raised one from tentative to standard. Three Reference Committees have been reactivated to undertake new work. Many other projects are underway which will lead to improved testing techniques and more precise methods of evaluation.

The Philadelphia Convention will be well attended by members of AATCC's Research Committees, and several Research Committees will exhibit results of their progress. The exhibits will be manned by committee members and the National Headquarters technical staff. We will be glad to discuss your technical problems with you and be of assistance in every possible way. We want to know about your stumbling blocks and the technical obstacles you are trying to hurdle so that we may orient our research program to better serve your needs. We ask you to come to Philadelphia to give us the benefit of your thinking and suggestions. At no other time in the year can we do this on as large a scale through direct personal contact.

Join us in Philadelphia in October!

CHARLES A SYLVESTER
Chairman, Executive Committee on Research
GEORGE S WHAM
Chairman, Technical Committee on Research

GENERAL PROGRAM

Wednesday, October 5

Registration—4:00 pm to 9:00 pm

Thursday, October 6

Registration—8:00 am to 5:00 pm
Technical Session—9:00 am to 12:15 pm
Exhibits—12:00 noon to 9:00 pm
Awards Luncheon—12:00 noon
Harold C Chapin Award
Olney Medal Award
American Dyestuff Reporter Award
Technical Session—2:00 pm to 4:00 pm

Friday, October 7

Registration—8:30 am to 5:00 pm
Technical Session—9:00 am to 12:15 pm
Exhibits—10:00 am to 6:00 pm
Intersectional Contest—2:15 pm to 4:30 pm

Saturday, October 8

Registration—9:00 am to 1:00 pm
Technical Session—9:00 am to 12:00 noon
Exhibits—10:00 am to 3:00 pm
Football Game at Franklin Field—1:30 pm
Annual Banquet—7:00 pm

Registration in Connie Mack Room
Technical Programs in Ballroom
Exhibits in Constitution Suite
Awards Luncheon and Banquet in Ballroom

TECHNICAL PROGRAM

(Abstracts of these papers begin on page 110)

THURSDAY MORNING, OCTOBER 6, 9 am to 12:15 pm———

"Dyeing and Finishing of New Cellulosic Fibers"—Walter J Hamburger, Fabric Research Laboratories, Inc (moderator) and the following panel of speakers representing fiber manufacturers:

"Dyeing and Finishing of Zantrel Polynosic Staple Fiber"—C Eugene Coke, Hartford Fibers Co

"Dyeing and Finishing of New Cellulosic Fibers —Enka Fiber 500"—L R Graybeal, American Enka Corp

"The Dyeing and Finishing of Several New Regenerated Cellulosic Fibers"—R S Kenyon, Courtaulds (Alabama) Inc

"Three New Fibers from Avisco"—I H Welch, American Viscose Corp

"Construction Limits of Fabrics Containing Creslan Acrylic Fiber"—H C Haller, American Cyanamid Co

"The Monforts Reactor—A Versatile Continuous Dyeing Machine for Synthetic-Fiber Fabrics"—Fred Fortess, Celanese Corp of America

"Dyeing and Finishing of Man-made Fibers in a Cotton Finishing Plant"—Heyward Simpson, Reeves Bros, Inc

THURSDAY AFTERNOON, OCTOBER 6, 12:45 pm to 4:00 pm

Awards Luncheon—Awards and Acceptances

"Improved Textile Properties from New Chemical Structures"—Arnold M Sookne, Harris Research Laboratories, 1960 Olney Medal Address

"Science and Craft in Color"—Jacques E Wegmann, Toms River Chemical Corp, presentation of Ciba Co Inc's Eidophor, a closed-circuit color television presentation

FRIDAY MORNING, OCTOBER 7, 9:00 am to 12:15 pm———

"Acrilan, Acrilan 16 and Their Blends"—Walter Stump, Chemstrand Corp

"Modern Continuous Dyeing Processes"—Richard Kern, Sandoz, Ltd

"Rovana—A Versatile New Yarn"—C R Sheehan, Dow Chemical Co

"Reducing the Felting Shrinkage of Wool"—Fred H Steiger, Rohm & Haas Co

"Importance of Odor Control in the Textile Industry" —B K Tremaine, Rhodia, Inc

"Fabric Development from a Practical Dyer's Viewpoint"—J E Greer, Burlington Industries, Inc

FRIDAY AFTERNOON, OCTOBER 7, 2:15 pm to 4:30 pm—INTERSECTIONAL CONTEST———

"Concurrent Dyeing and Finishing of Cellulosic Textiles"—Delaware Valley Section

"A Study in Union Dyeing"—Northern New England Section

"Chemical Mechanisms in Chlorine Retention by Resin-treated Cotton Fabrics"—Piedmont Section

"A Study of Fluorocarbon Finishes and Their Effect on Dyestuffs"—Rhode Island Section

"Selection of Direct Dyestuffs for Application to Undesulfured Rayon Staple"—Southeastern Section

SATURDAY MORNING, OCTOBER 8, 9 am to 12:00 noon———

"Dyeing with Vinylsulfone-Reactive Dyes" Hans Luttringhaus, Carbic-Hoechst Corp

"Status of Nonwoven Fabrics in the Textile Trade" —Howard E Shearer, American Viscose Corp

"New Fibers from DuPont"—M M Christie, E I duPont de Nemours & Co, Inc

"Recent Developments in the Dyeing of Verel Modacrylic Fiber"—Robert J Fortune, Tennessee Eastman Co

"New Color Measuring Instrument for Use by the Textile Industry"—F J Rizzo, QM Research and Development Command, US Army

"The Textile Industry Looks Ahead"—Irene Blunt

WORLD'S LARGEST MOBILE COLOR TELEVISION UNIT TO BE USED AT AATCC CONVENTION

Eidophor projector

THE accent will be on the new—in fibers, fabrics and color—at the AATCC Convention. A special feature will be a closed circuit television program, live and in full color, called "Science and Craft in Color." The program, which will be produced especially for the Convention through the courtesy of Ciba Co, Inc, will be presented on a 15×20-foot TV screen.

"Science and Craft in Color" will emanate from the Philadelphia Textile Institute over Eidophor, reportedly the most advance closed-circuit color television projection system yet developed. (Eidophor is a Greek word meaning "bearer of images".) Prior to Eidophor, it had been difficult to project clear color image onto a screen as large as those used in movie theatres.

Following the Awards Luncheon on Thursday, October 6 at the Sheraton Hotel, three outstanding scientists will discuss and demonstrate the chemical, physical and physiological aspects of color using the Eidophor system. They are: Jacques Wegmann, of the Toms River Chemical Corp; Herman Branson, head of the physics department at Howard Univ, Washington, DC; and Arthur Linksz, ophthalmologist and color vision expert who is associated with the Manhattan Eye and Ear Hospital, New York, NY.

Eidophor is said to own the world's largest mobile color television unit, which includes a 35-foot trailer containing two projectors, four television cameras, a complete public address system, two large screens and all necessary control equipment. This giant truck and its equipment, manned by a crew of cameramen and television projection engineers, will be in Philadelphia to assist the production staff in producing this unique program.

The Eidophor projector weighs 750 pounds and stands 5½ feet tall.

LADIES PROGRAM

LADIES are requested to register at the main registration desk and receive Convention badge, which will admit them to all functions of the Convention. All ladies will be welcome to visit the exhibits during regular exhibition hours.

THURSDAY, OCTOBER 6

10:00-11:00 am—Coffee and sweetrolls served in Parlor D, Sheraton Hotel

4:30-6:30 pm—Ladies' Welcome Party, tiered balcony, Sheraton Hotel

FRIDAY, OCTOBER 7

10:00-11:00 am—Coffee and sweet rolls served in Parlor D, Sheraton Hotel

10:30 am———Two-hour bus tour of Historic Philadelphia. After tour, busses will proceed to Cherry Hill Inn, near Haddonfield, NJ, for luncheon in the Independence Room at 1:00 pm. *Note:* For those ladies who do not participate in the tour, buses will leave the Sheraton Hotel at 12:30 pm for luncheon at Cherry Hill Inn at 1:00 pm.

SATURDAY, OCTOBER 8

10:00-11:00 am—Coffee and sweet rolls served in Parlor D, Sheraton Hotel

6:30 pm—Annual Banquet, followed by entertainment

Ladies hospitality headquarters will be in Parlor D, Sheraton Hotel. This room will be at the ladies' disposal at all times. A hostess will be in attendance from 10:00 am to 4:00 pm daily. Facilities for bridge, television and radio will be available.

PERSONNEL SERVICE AT CONVENTION

The Personnel Service will operate to introduce members to prospective employers, without charge, from 2 to 5 pm on Thursday; 9 am to 5 pm on Friday; and 9 to 2 pm on Saturday in Room 558. Members seeking employment should, if possible, register before the Convention, but members, as well as employers, may register at the Convention.

Every person expecting to use this service in seeking employment is requested to write in advance to Mrs E R Goodale, Employment Service, AATCC, Box 28, Lowell, Mass for two blanks on which to state his qualifications and desires. For attachment to these, two photographs measuring about 2 × 2½ inches are desirable.

Employers registering with the Service at the Convention wll be permitted to consult these records, and will be assisted in arranging interviews. Representatives of educational institutions also are invited to register for the purpose of answering inquiries about their students.

EXECUTIVE COMMITTEE—1960 NATIONAL CONVENTION

Chairman

FRED V TRAUT
Globe Dye Works Co

Co-Chairman

WILLIAM H BERTOLET III,
Laurel Soap Mfg Co, Inc

Dining

JOSEPH J MURPHY, *chairman*
Laurel Soap Mfg Co, Inc

Entertainment

WALTER W GLEADALL, *chairman*
Textile Chemical Co

Exhibits

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JOHN W ROGENMUSER JR
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DAVID MacGREGOR
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Finance

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Para-Chem, Inc

Ladies

MATTHEW A NOONAN, *chairman*
Becco Chemical Div

MRS EARL S DUNLAP
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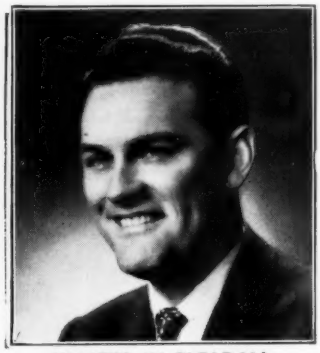
MRS MILLARD E HAINES
MRS THOMAS H HART
MRS MATTHEW A NOONAN
MRS A E RAIMO
MRS PAUL L SPEAKMAN
MRS FRED V TRAUT

Publicity

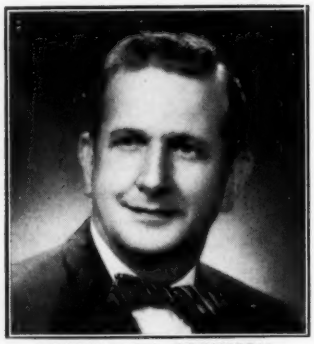
L KEVIN McCHESNEY, *chairman*
Leatex Chemical Co

JOSEPH J MURPHY
Chairman
Dining Committee



WALTER W GLEADALL
Chairman
Entertainment Committee

M H KLEIN
Chairman
Exhibits Committee



DONALD W ROBINSON
Chairman
Finance Committee

MATTHEW A NOONAN
Chairman
Ladies Committee

L KEVIN McCHESNEY
Chairman
Publicity Committee

THOMAS H HART
Chairman
Reception Committee

A E RAIMO
Chairman
Registration Committee

CHARLES N KUZMA JR
Chairman
Hotel Committee

JOHN G FERGUSON
Co-chairman
Reception Committee

ERNST W EMPTING
Co-chairman
Registration Committee

WILLIAM H BREHM II
Chairman
Transportation Committee

Reception

THOMAS H HART, Hart Products Corp, *chairman*

JOHN G FERGUSON, Putnam Chemical Corp, *cochairman*

JOSEPH A CLARK, Leatex Chemical Co

JAMES E CONWAY, American Cyanamid Co

MILLARD E HAINES, Argo Mills Div

J WALTER HUBER, Onyx Chemcal Corp

WM D HUMPHREYS, G J Littlewood Co

JOHN LINTON III, Carbic-Hoechst Corp

RALPH NEBELUNG, Sandoz, Inc

PHILIP H ORSER, Frankford Woolen Co

DONALD V SPEESE, Geigy Chemical Corp

FRANK VELLNER, Vellner & Co

Printing

CLARENCE A SEIBERT, Scholler Bros, Inc, *chairman*

Reservations

CHARLES N KUZMA JR, Amalgamated Chemical Corp, *chairman*

Registration

A E RAIMO, John Campbell & Co, *chairman*

ERNST W EMPTING, Verona Dyestuffs, Inc, *cochairman*

Transportation

WILLIAM H BREHM II, Brehm & Stehle Dye Works, *chairman*

Technical Program

S GRAEME TURNBULL, E I duPont de Nemours & Co, Inc, *chairman*

DOROTHY ACHEY, Blue Ridge Textile Co

RAYMOND S BABIARZ, Joseph Bancroft & Sons Co

LOUIS B COOK, Millville Mfg Co

BURT F FARIS, E I duPont de Nemours & Co, Inc

LAWRENCE A HALLETT, Jefferies Processors

SAMUEL H LOPER, E I duPont de Nemours & Co, Inc

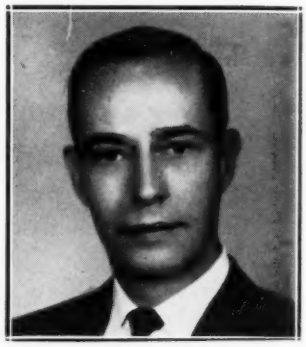
CHARLES B MINOFF, Jaunty Fabric Corp

WILLIAM S SOLLENBERGER, American Viscose Corp

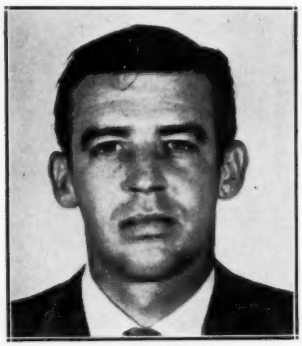
Abstracts
OF TECHNICAL PAPERS

WALTER J HAMBURGER

C EUGENE COKE



L R GRAYBEAL



R S KENYON

I H WELCH

THURSDAY MORNING, OCTOBER 6

Symposium—"Dyeing and Finishing of New Cellulosic Fibers"—Walter J Hamburger, Fabric Research Labs, Inc, moderator

ZANTREL POLYNOSIC STAPLE FIBER

C EUGENE COKE
Hartford Fibres Company
New York, NY

A discussion of this fiber, the basic concepts of which led to its development, its structure, and physical properties will be presented. Similarities between this new man-made cellulosic fiber and cotton will be pointed out.

The paper will offer a description of the classes of dyes and dyeing techniques which can be applied to this fiber. Also included will be wet-processing procedures and the application of "easy-care" resins.

End uses and fabric performance characteristics will be reviewed briefly.

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ENKA FIBER 500

L R GRAYBEAL
American Enka Corp
Enka, NC

Enka Fiber 500 is a regenerated cellulosic fiber chemically like ordinary rayon but having an internal physical structure that gives it higher wet modulus and much lower elongation. This is said to result in low progressive shrinkage after mechanical compression, as in cotton. The behavior of rayon is preserved with respect to dyeing characteristics and processing into fabric. Resin requirements for a given stability and crease recovery are similar to those of cotton. Unlike cotton, however, the fabric loses little or no strength in resin treatment. End uses for which Fiber 500 fabrics appear suitable include women's blouses and dresses, men's sport shirts and T-shirts, suiting blends with polyester and acrylic fibers, and draperies.

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NEW REGENERATED CELLULOSIC FIBERS

R S KENYON
Courtaulds (Alabama) Inc
Mobile, Ala

Continuing fiber research on the part of the Courtaulds organization has led to the development of several new cellulosic fibers for the textile and allied industries. Most recently it has introduced the family of cross-linked staples, Corval and Topel, along with the high wet modulus fiber, Moynel.

Cross-Linked Staple. In general it may be stated that the family of cross-linked fibers may be prepared and dyed as regular rayon with only slight modifications. Mercerization, however, is possible with newer

members of this family. Fabrics made from these fibers are said to be relatively stable, requiring little resin for complete stability in the 100% from. In blends with the newer synthetics up to 50% they do not require resination for stability or high crease angles, it is claimed. Excellent "wash-and-wear" fabrics reportedly have been prepared in the pure finished state.

Moynel. Moynel reportedly is being successfully prepared, dyed, and finished on conventional cotton equipment including mercerization and compressive shrinking. It is said to require approximately the same level of resin solids as cotton to achieve stability and high crease angles without the normal loss in tensile strength associated with cotton. In blends with carded cotton the resultant fabrics reportedly have a combed cotton appearance.

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THREE NEW FIBERS FROM AVISCO

I H WELCH
American Viscose Corp, Marcus Hook, Pa

Avril. Avril, or Fiber 40 as it is known in fiber form, is a new high wet modulus fiber. Its inherent property of low enlongation both wet and dry reportedly makes possible rayon fabrics which can be mechanically stabilized by compressive shrinkage techniques.

Avril has a cross sectional swelling of 55% compared with regular rayon at approximately 100%. It also is said to have greater resistance to caustic soda, which permits mercerization when desired, such as in blends with cotton.

Its dry strength is reported to be about 10% higher than regular rayon while its wet strength is approximately 30% greater.

Avril fabrics or Avril blended fabrics require no special preparation and can be processed with greater wet tension than regular rayon, it is claimed.

Avril reportedly accepts all classes of dyes normally used in dyeing cellulosic fibers.

Avlin. Avlin rayon is a muti-cellular rayon fiber which is said to possess unique properties found in no other rayon staple. When wet with water and dried, Avlin rayon fibers reportedly will bond firmly to themselves as to other cellulosics. Avlin is said to have a broad flat cross section which, along with its unique bonding properties, provides a firm, crisp linen-like hand.

Avlin is thought of more as a blending fiber than in 100% fabrics. 10 to 30% Avlin blended with other cellulosics, acrylics or polyesters seems to show the most promise.

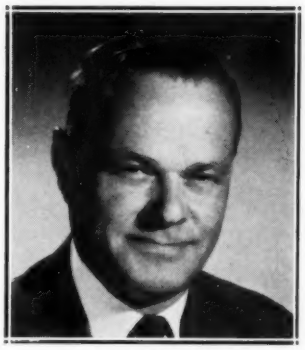
Fabrics made from Avlin reportedly can be prepared the same as fabrics containing regular rayon.

Avlin is said to accept all classes of dyes normally used for cellulosics.

Avron. Avron, or XL as it is known in fiber form, is a new high-strength rayon fiber, said to be 30% stronger dry and 50% stronger wet than regular rayon. The abrasion resistance of Avron reportedly is approximately double that of regular rayon. The cross section of Avron resembles that of the kidney bean with a relatively regular surface. The fiber has a semidull appearance resulting from the gas voids within its structure.

Avron fabrics require no special preparation and can be processed as easily as regular rayon, it is claimed.

All classes of dyes for cellulosic fibers reportedly may be used to dye Avron to a full range of shades.



H C HALLER

CONSTRUCTION LIMITS OF FABRICS CONTAINING CRESLAN ACRYLIC FIBER

J F BOGDAN and HENRY K C WOO
Textile Research Center
North Carolina State College
Raleigh, NC

and

H C HALLER
American Cyanamid Co
New York, NY

Today there are available so many new fibers with so widely different physical properties that the most ambitious fabric designer cannot gain adequate knowledge of their behavior by attending the time-honored School of Experience alone. Fabric construction limits, the maximum combination of ends and picks of given yarns, which have been estabished for the natural fibers, no longer apply when yarns spun from fibers with different specific gravities are used.

The ideas and plans of the fabric designer are limited by the techniques and economics of production; he must be sufficiently familiar with these to avoid impossible, unnecessarily difficult, or costly constructions. Trial and error methods have produced the data necessary for intelligent fabric designing, but experience is Time, a commodity in short supply in today's commerce, and made expensive by the pressures of competition.

Empirical traditions are not to be scorned, but alone they form a poor basis for progress into new fields with unfamiliar materials, nor do they suffice for the modern methods of production. What is needed is a universal system of textile technology which reduces all fabrics to the bare parameters which are essential for their description and prediction.

Appreciating this need and the dilemma of the fabric designer, American Cyanamid Company sponsored a fabric engineering research project at the Textile Research Center, North Carolina State College. Its purpose was to develop a simple general description of the basic forms of textile materials in idealized geometry. These theories have been reduced by the calculating power and speed of electronic computers to sets of prediction tables which require no computation on the part of the fabric designer, and which relieve his mind of the burden of formulas.

Development of the data was on Creslan acrylic fiber but the system is adaptable to a wide range of other fibers.

F FORTESS

THE MONFORTS REACTOR— A VERSATILE CONTINUOUS DYEING MACHINE FOR SYNTHETIC FIBER FABRICS

F FORTESS, J E TORBET, G C WARD, and J S WARNER
Celanese Fibers Co
A Division of Celanese Corp of America
Charlotte, NC

The Monforts Reactor machine, previously described in *American Dyestuff Reporter*, May 16, 1960, was selected as having a great potential for economically and continuously handling short runs in both the cotton and synthetic dyehouses. In many of the pilot-plant trials, the European experience with efficient desizing, vat, sulfur, and hydron dyeing of cotton and rayon were confirmed. Major emphasis was placed on reserve, cross and union dyeing of blends and combination fabrics containing Arnel triacetate or acetate with cotton or rayon. Commercially feasible processes are available using fixable direct dyes or fiber-reactive dyes on cotton or rayon, reserving or cross dyeing the Arnel or acetate with disperse dyes from a common bath containing suitable swelling agents.

For Arnel triacetate, the use of an aqueous dyebath containing 20-25% diacetone alcohol and 5% phenylglycol ether reportedly makes possible heavy shades including navy in 10 seconds on the Monforts Reactor. This same bath is said to raise the safe ironing point of triacetate fabrics from 190°C to 230°C, thus eliminating the need for a separate heat treatment.

A method has been developed for continuously dyeing tricaetate black on this machine with 30 seconds residence time, by simultaneously applying a stabilized diazo base and betaoxynaphthoic acid.

A wide variety of continuous filament polyamide, polyester fabrics and spun fabrics based on polyamide, acrylic, nytril and polyester fibers processed on the Monforts Reactor will be described. The advantages and disadvantages of processing sheer continuous filament fabrics, corduroys, pile and tufted fabrics, and heavy upholstery fabrics will be discussed.

●

DYEING AND FINISHING OF MAN-MADE FIBERS IN A COTTON FINISHING PLANT

HEYWARD V SIMPSON
Reeves Bros, Inc
New York, NY

During the last decade we have witnessed the introduction, development, and tremendous growth of many new man-made fibers. Fabrics made of cotton blended with many of these fibers have gained widespread acceptance.

One of the earlier blends introduced was the polyamide-cotton for fabrics of improved abrasion resistance and strength. Cotton finishing plants handle these goods with relatively minor process changes.

More recently, cotton-acrylic fabrics have been processed, and can be expected to grow in volume.

Since introduction, the polyester-cotton blends have enjoyed a phenomenal sales growth. Fabrics in this group are today a major item, accounting for millions of yards of production annually.

The processing of these fabrics is both an opportunity and a demanding challenge to our cotton finishing plants.

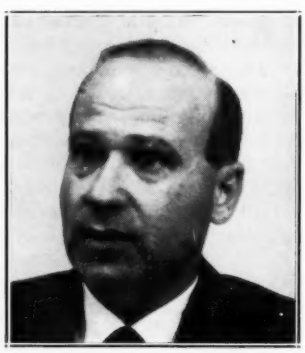
An obvious basic requirement of this work is that a good job be done on the cotton fiber under those conditions which do not harm the man-made fiber portion of the blend. This demands wide-range familiarity with the cotton finishing art.

It is also necessary to meet the finishing needs of the man-made fiber. In this area many new skills and techniques must be learned, some machinery modified, or new machinery installed.

There is then the need to study, to adjust, to modify processes and machinery for optimum results with each individual blend. This must go on continuously, since improvements in colors, chemicals and processes are constantly being made.

The increasing volume of well-dyed, properly finished, blended fabrics emerging from our plants is evidence that cotton finishing plant men and machines are measuring up to the challenge of the man-made fibers.

THURSDAY AFTERNOON, OCTOBER 6



ARNOLD M SOOKNE

IMPROVED TEXTILE PROPERTIES FROM NEW CHEMICAL STRUCTURES

ARNOLD M SOOKNE
Harris Research Laboratories
Washington, DC

The usefulness of fibers depends both on their physical properties, such as strength, elasticity and softening point, and their chemical properties (which affect dyeability, moisture sorption, etc). These physical and chemical properties depend in turn on the chemical

composition of the fiber and the arrangement of its molecules, ie, its structure.

In recent years the fiber producers have provided the textile industry with a brilliant array of fibers with new chemical structures and improved textile properties. These have involved increased crystallinity, as in isotactic polyolefins, improved orientation, or the use of graft polymers.

The textile chemist in his finishing operations also changes the structures of the fibers he handles, and in a sense he creates new fibers from cotton, rayon or wool by chemical modification. Some relationships between the chemical structure and useful textile properties of such chemically modified fibers will be discussed, with particular reference to "wash-wear" treatments for cellulosic fibers. It can be shown that, for some "wash-wear" treatments, the introduction of intermolecular crosslinks is largely responsible for the improved useful properties, and that a very large improvement in utilization of the crosslinking reagent should be possible.

There has been great progress in textile finishing in recent years, but there remain many opportunites for the improvement of old processes and the creation of new ones. The textile chemist and finisher is in a unique position to attempt such improvements, because he can chemically modify the final fabric or even the garment itself.

FRIDAY MORNING, OCTOBER 7

WALTER STUMP

ACRILAN, ACRILAN 16 AND THEIR BLENDS

WALTER STUMP
Chemstrand Corp
Decatur, Ala

Regular Acrilan, or Acrilan 1656, as it is called at Chemstrand, is dyed with a variety of dyestuff classes. Acrilan 16 is dyed with disperse and cationic dyes only. This puts Chemstrand into the unique position of having two fibers which can be combined to produce a 100% acrylic fabric which can be piece dyed into solid shades or into two colors by a simple one-bath method. The dyeing procedures for dyeing fabrics of 100% of one or the other fiber, of blends of the two fibers, and of blends of these fibers with other fibers, especially rayon and wool, will be briefly explained.

RICHARD KERN

A NEW CONTINUOUS DYEING PROCESS

RICHARD KERN
Sandoz Ltd
Basle, Switzerland

First mechanization and automation of textile processing in general will be analyzed. Continuous dyeing processes, such as pad-steam, and their limited possibilities as far as the application of various dyestuff groups are concerned, will be briefly discussed. It will be shown that it is impossible to apply continuously substantive dyes, except in very pale shades, successfully and economically. Experiments reportedly prove that in normal dyeing the dyeing time is shortened if the temperature of the dyebath is raised above the boil by applying pressure. Further tests reportedly show that the time necessary for fixing dyestuffs by steaming can be shortened by raising the temperature. A pressure steamer was constructed which is said to make it possible to steam, at a temperature of 248°F, material passing continuously through.

With such equipment it is reported possible to apply substantive dye continuously without need of long steaming times. Various tests reportedly show that it is also possible to apply dispersed, acid and premetallized dyestuffs to various synthetic fibers and blends. Such equipment is currently uesd in Europe to dye ribbons and tapes.

There is also in existence a prototype of a bulk machine for normal width goods which is at the moment being tested in bulk production. This paper will be illustrated with various graphs and projections of color pictures of different dyeing tests.

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ROVANA—VERSATILE NEW YARN

CHARLES R SHEEHAN
Dow Chemical Co
Williamsburg, Va

This paper will review the physical and chemical properties of Rovana and discuss the types of finishing operations that are applicable to fabrics of Rovana. Embossing, dielectric sealing, latex and solvent system coatings will be included. Coloration and printing of fabrics containing Rovana and Rovana combined with other fibers will be discussed.

Visual and physical test data will be presented to show the effect of a range of embossing temperatures and speeds on the clarity and durability of embossed combination fabrics of Rovana and rayon.

The dielectric sealing properties of Rovana and Rovana in combination with other yarns will be dis-

CHARLES R SHEEHAN

FRED H STEIGER

JAMES E GREER

cussed. Frequencies of 13.5, 18, and 27 megacycles were employed for this work.

Automotive fabrics, draperies, upholstery, wall covering, luggage, window shades, place mats and millinery are among the household and industrial applications in which the unique characteristics of Rovana are said to be effectively utilized.

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REDUCING THE FELTING SHRINKAGE OF WOOL

FRED H STEIGER
Rohm & Haas Co
Philadelphia, Pa

Relaxation, consolidation, and felting shrinkage of wool will be differentiated. The influence of washing conditions on the degree of felting shrinkage will be discussed.

More than 250 published methods for reducing or eliminating the felting of wool will be classified according to chemical type. The mode of action and the accompanying side effects of these groups will be considered. In particular the characteristics of wool treated by additive processes and degradative processes will be discussed.

The results of an investigation into the stabilization of wool by the application of an acrylic copolymer which can be thermoset on the fabric will be presented. In particular the influence on the total stabilization of factors, such as fabric pretreatment, polymer hardness, the quantity of thermosetting material employed in the finish, the curing conditions, and the mechanical handling during the treatment will be discussed. Finally, the properties of fabric made feltproof by a chlorination process and by treatment with an acrylic copolymer will be contrasted in detail.

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FABRIC DEVELOPMENT OF SYNTHETIC BLENDS FROM A PRACTICAL DYER'S VIEWPOINT

JAMES E GREER
Burlington Industries, Inc
Greensboro, NC

Designing, dyeing-finishing and merchandising fabrics of man-made fibers is really a new business. It is only about 15 years old. It is a new business grafted onto the older structures and ideas of the textile industry. Making a fabric of synthetic fibers and merchandising it is quite different from that of the regular all-cotton or all-woolen business.

Fabric development of synthetic mixtures is a complicated affair which, if not understood by mill management, will result in your plant losing money, even to the point of going bankrupt; and put you out of a job. It is easy to oversimplify the situation and underestimate the problems that stem from fabric development of synthetic blends.

The end-use, fastness requirements, styling and market situation, determine the type of fibers that can be used in making a fabric. Many mistakes have been made in the past. The designer must educate himself by close contact with his dyer on what combination of fibers is practical to dye.

Next, it is important that the spinner and weaver be considered in designing a fabric. It costs more to spin and weave a blend or a mixture of fibers than it does any single fiber yarn. Automotive upholstery fabrics is an example of complicated, expensive manufacturing of a synthetic fabric. Adding Orlon into your woolens to produce lighter weight fabrics will add to your costs and complicate your whole operation.

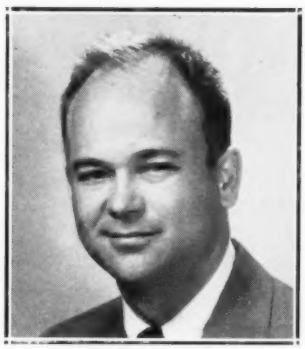
Third point, is the dyer—the dyehouse itself. To be successful, the dyehouse must have skill, knowledge and a staff with the experience of handling synthetics. They must have the equipment. Finally, the most essential point is that the plant know its costs. The plant that is already in synthetics or that is contemplating getting into synthetics, will go bankrupt—go broke, if you please, if they don't have a realistic cost system so they can price their services at a profit to themselves. The plant must have a staff that figures cost. The cost of every operation, everything that is done to the colth, must be added up realistically. You must include the cost of the fabric development, the cost of the sampling, the lab personnel needed to produce the samples, the cost of redyeing—which is inevitable. Sometimes these add up to a surprisingly high figure.

Somehow or other, your dyer and lab can hunt around and finally learn how to dye some particular blend, and eventually get the goods out. However, if you have designed an impractical fabric and your New York office has taken the business at an unrealistic price that you hear described so often as "one that pays part of my overhead", then you are in trouble. Your plant will eventually become bankrupt and all of your designing skill, your dyeing knowledge and your beautiful fabric will go for naught.

It is paradoxical that the synthetics fabric industry, which has grown by 2000 percent in the last 10 years, an industry that is bringing the best of chemistry and giving the public a better garment at a lower price than 10 years ago, is itself having a difficult time in surviving this revolution.

H LUTTRINGHAUS

H E SHEARER



M M CHRISTIE

IMPORTANCE OF ODOR CONTROL IN THE TEXTILE INDUSTRY

B K TREMAINE
Rhodia, Inc
New York, NY

(No abstract available)

SATURDAY MORNING, OCTOBER 8

DYEING WITH VINYLSULFONE FIBER-REACTIVE DYES

H LUTTRINGHAUS
Carbic-Hoechst Corp
Mountainside, NJ

The interesting chemistry of the vinylsulfone fiber-reactive dyes has been elucidated to such an extent that it can be discussed intelligently without having a complete explanation for all reactions which take place during the dyeing with these dyestuffs. Because of the formation of the Remazol ether linkage, these dyes show different characteristics, which will be explained. The methods of application for cellulosic fibers have been improved in many fields through research and practical experience. Methods and results acceptable to our industry because of their simplicity and gratifying performance will be discussed and shown. Based on practical experience, samples of actual mill runs will be discussed and practical suggestions will be made for the dyer of cotton and rayon packages, especially for the man who always has trouble dyeing vats on packages; for the man who has continuous equipment, such as chemical pad-steam units of curing ranges and the mill mill which dyes on the jig; for the dyer who has Smith Drum Cascade machines; and for the man who dyes on the reel. The practicability of the dyeing from long liquor ratio will be discussed and it will be shown which dyes are suitable for this particular process.

In this connection also the effect of resins on the shade and lightfastness will be discussed. While vinylsulfone fiber-reactive dyes are especially designed for the dyeing of cellulosic fibers, practical results from mill runs will be shown on man-made fibers; that is, certain acrylic fibers, on mixture of different acrylic fibers, on blends of wool, acrylic fibers and rayon, on blends of high-tenacity rayon, nylon and cotton, most of them in simple one-bath procedures.

STATUS OF NONWOVEN FABRICS IN THE TEXTILE TRADE

H E SHEARER
American Viscose Corp
Marcus Hook, Pa

While some of the glamorous publicity given to, but not enjoyed by, nonwovens in the latter 1950's has subsided, this material continues to make itself better known and appreciated for its true value in the textile trade. A reappraisal of this material by its manufacturers and consumers has brought about an overall retrenchment. Some manufacturers have deemed it expedient to withdraw. Others have been equally quick to take up the slack and increase their efforts through improved production facilities and methods of merchandising.

It will be pointed out how these changes have been accompanied by major shifts in key personnel; the development of new adhesives and fiber descriptions; the introduction of improved machines for forming and bonding the web, and the expansion of manufacturer-distributor relationships. It will be indicated that, while research and development of new products is receiving less emphasis than the sale of existing production, these nevertheless continue to move forward at a gratifying rate.

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NEW FIBERS FROM DU PONT

M M CHRISTIE
E I du Pont de Nemours & Co, Inc
Wilmington, Del

New fibers with unique characteristics provide an ever-expanding base for the development of fabrics with new style, aesthetics and performance. For a number of years, Du Pont has devoted major research efforts to evolving a more comprehensive family of fibers to meet the needs of the industry. A number of new fibers recently introduced includes:

Orlon Type 72 acrylic fiber for the cotton system
Orlon Sayelle bicomponent acrylic fiber
Antron trilobal nylon
Dacron Type 62 polyester fiber
Lycra Spandex fiber.

In fabrics, these represent a wide variety of types and end-use areas. The outstanding features of these fibers as well as some of their physical properties which can be translated into desirable fabric characteristics will be discussed.

R J FORTUNE

RECENT DEVELOPMENTS IN THE DYEING OF VEREL MODACRYLIC FIBER

R J FORTUNE
Tennessee Eastman Co
Kingsport, Tenn

One of the hazards of processing many of the man-made fibers is their sensitivity to stretch and distortion in the presence of the high temperatures commonly used in the application of dyes. Verel modacrylic fiber reportedly was numbered in this group until recent months when it was learned that, because of unique properties of the fiber and newly developed techniques, dyes could be applied at temperatures lower than those at which distortion primarily occurs. Recent developments are said to permit the application of disperse, neutral premetallized, and basic or cationic dyes at 160°F. Dyeing at 160°F reportedly yields equivalent fastness properties to dyeings made at 212F°.

Using this new technique in raw-stock dyeing, loose and fluffy dye cakes are obtained. This is said to afford easier rinsing, opening, drying, and processing.

By lowering the dyeing temperature, new areas of fabric development are opened, permitting many new styling advances. Probably one of the most important areas developed by this low-temperature dyeing technique is in the piece dyeing of tufted or woven floor coverings. Pile distoration has been a major obstacle in the piece dyeing of carpeting and one which has prevented any widespread application for the newer fibers. By dyeing at 160°F, distortion and directional lay of the pile is said to be virtually eliminated. A complete range of shades with acceptable colorfastness reportedly may be produced. Verel can be dyed equally well in packages, skein, and fabric form by use of this new technique which results in greater retention of original fiber properties, it is claimed.

ALL TECHNICAL SESSIONS WILL BE HELD IN THE SHERATON HOTEL BALLROOM

FRANK J RIZZO

NEW COLOR-MEASURING INSTRUMENTS FOR USE BY THE TEXTILE INDUSTRY

FRANK J RIZZO and ALVIN O RAMSLEY
U S Army
Quartermaster Research & Engineering Command
Natick, Mass

The Quartermaster Corps and the textile industry have long wanted and needed color-measuring instruments for their individual and mutual purposes. The Quartermaster Corps needs such devices to more adequately control the quality of the materials that clothe and shield the soldier and his equipment to the specific levels essential for the stringent end-use requirements; the textile industry requires instrumentation to stabilize and control each step of the manufacturing process, to reduce or eliminate human error, to establish quality-control levels along objective lines and to reduce cost. Both groups require instrumentation so that understandings are facilitated and disagreements are eliminated.

The available instrumentation, some quite sophisticated, has not, however, been sufficiently adequate to the task both groups wish it to perform. Many instruments have been developed and marketed, some with rather ingenious features, and many have found specific applications in the industry with consequent benefit to the control of quality. Universal acceptance of measuring instruments for routine shade control in the many possible areas of textile operations has not been possible for a number of reasons, a substantial percentage of which are instrument related but some of which are related to inadequacy of the theories upon which the design and use of equipment have been based.

The study reported will analyze the factors involved and how how corrective steps in design and in concepts of use have been applied to newly developed instrumentation under Quartermaster sponsorship, which, it is believed, goes a long way towards achieving the desired goal of general applicability to textile problems.

A Tristimulus Colorimeter and a Rapid Scanning Spectrophotometer, capable of direct readings of color and color differences, will be described and their performances defined in comparison with standard visual assessment. General specifications of design characteristics will be given and are believed to be the basis for the accomplishment of improved instrumentation meeting all of the essential requirements. Problems possibly solvable in the textile industry by the developed instruments will be defined; also the possible uses of this equipment in the inspection as well as development of military textiles will be recorded.

1960 AATCC INTERSECTIONAL CONTEST

THIS year's AATCC Intersectional Contest, to be held at 2:00 pm Friday afternoon, October 7th, in the Sheraton Ballroom, will feature papers from five Sections.

The Rhode Island Section maintains a commanding lead in the number of cumulative points attained since the inception of the Contest. Assigning values of 5, 3 and 2 for the first, second and third places respectively (the same ratio in which prize money is awarded), the cumulative standing is as follows:

Rhode Island—49
Delaware Valley—37
Metropolitan—36
Piedmont—35
Northern New England—28
Washington—8
Southeastern—7

The record of winners, since the contest was inaugurated in 1940, is as follows:

1940—1st, R I; 2nd, S E; 3rd, DV
1941—1st, Met; 2nd, DV; 3rd, S E
1942—1st, Met; 2nd, N N E; 3rd, DV
1943—1st, DV; 2nd, N N E; 3rd, Met
1944—1st, R I; 2nd, N N E; 3rd, Met
1945—1st, R I; 2nd, N N E; 3rd, Met
1946—1st, Met; 2nd, DV; 3rd, R I
1947—1st, N N E; 2nd, DV; 3rd, Met
1948—1st, Pied; 2nd, N N E; 3rd, DV
1949—1st, R I; 2nd, N N E; 3rd, Pied
1950—1st, Pied; 2nd, R I; 3rd, DV
1951—1st, Met; 2nd, R I; 3rd, DV
1952—1st, R I; 2nd, DV; 3rd, Met
1953—1st, R I; 2nd, Met; 3rd, DV
1954—1st, Wash; 2nd, Pied; 3rd, R I
1955—1st, R I; 2nd, DV; 3rd, Pied
1956—1st, Pied; 2nd, Wash; 3rd, R I
1957—1st, Pied; 2nd, Met; 3rd, S E
1958—1st, Pied; 2nd, DV; 3rd, R I
1959—1st, N N E; 2nd, Pied, 3rd, DV

A glance at the above shows that the Rhode Island Section, in addition to leading points, also leads in the number of first place awards, having won 7 times. Following in order is the Piedmont Section with 5, the Metropolitan Section with 4, Northern New England with 2, and Delaware Valley and Washington with 1 each. The Northern New England and Delaware Valley Sections lead with 6 second-place awards followed by Rhode Island, Metropolitan, and Piedmont with 2, and Southeastern and Washington with 1 each. In third place awards, the Delaware Valley Section leads with 7, followed by Metropolitan with 5, Rhode Island with 4, and Piedmont and Southeastern with two. The details of this year's contest follow.

THOMAS J GILLICK JR
Chairman, National Committee

ROLAND E DERBY JR
Member, National Committee

KENNETH A HOWRY
Member, National Committee

LEE C JOHNSTON
Member, National Committee

ALBERT H RANT
Chief Justice

CHIEF JUSTICE

Albert H Rant
Laurel Soap Mfg Co

JUDGES REPRESENTING SECTIONS

Delaware Valley

Joseph J Benischeck, *judge*
Philadelphia Wool Scouring and Carbonizing Co
Samuel H Loper Jr, *alternate judge*
E I duPont de Nemours & Co, Inc

Mid-West

J Glenn Templeton, *judge*
Rose Patch & Label Co
Lee G Johnston, *alternate judge*
American Inst of Laundering

Niagara Frontier

J E Loughlin, *judge*
Allied Dye & Chemical Corp
T H Foltz Jr, *alternate judge*
Lockport Felt Co

Pacific Southwest

John Smith, *judge*
Dye Masters, Inc
Angus Roberts; *alternate judge*
Jacques Wolf & Co

Rhode Island

Alberic T DiMasi, *judge*
Products Development Lab
Joseph Smith, *alternate judge*
Cranston Print Works Co

Washington

Louis R Mizell, *judge*
Harris Research Laboratories
Florence Forziati, *alternate judge*
National Bureau of Standards

Hudson-Mohawk

Allen J Rooney, *judge*
Geigy Chemical Corp
Victor J Christopher, *alternate judge*
Mohasco Industries, Inc

Metropolitan

Emil C Hansen, *judge*
General Aniline & Film Corp
Charles Trommer, *alternate judge*
Boris Kroll Lab

ALBERIC T DI MASI
Judge, Rhode Island

JOSEPH J BENISCHECK
Judge, Delaware Valley

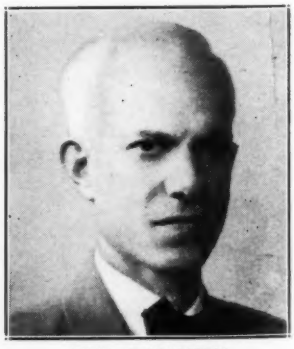
LOUIS R MIZELL
Judge, Washington

J GLENN TEMPLETON
Judge, Mid-West

ALLEN J ROONEY
Judge, Hudson-Mohawk

J E LOUGHLIN
Judge, Niagara Frontier

JOHN SMITH
Judge, Pacific Southwest



EMIL C HANSEN
Judge, Metropolitan

JOHN H SKINKLE
Judge, Northern New England

VICTOR S SALVIN
Judge, Piedmont

ROBERT C BOGLE
Judge, Western New England

A J KELLY
Judge, South Central

Northern New England

John H Skinkle, *judge*
Lowell Technological Inst
Joseph S Panto, *alternate judge*
Fabric Research Labs, Inc

Piedmont

Victor S Salvin, *judge*
Celanese Fiber Co
Vernon C Smith, *alternate judge*
Mooresville Mills

Southeastern

Robert B Van Tassel, *judge*
Jefferson Mills
Marc V Shivers, *alternate judge*
Thomaston Mills

Western New England

Robert C Bogle, *judge*
A H Rice & Co
Paul W Reeves, *alternate judge*
Princeton Knitting Mills

South Central

A J Kelly, *judge*
Burkart-Schier Chemical Co

SECTIONAL COMMITTEES

Delaware Valley Section

E NICHOLAS SARANTIS, *chairman*
E I duPont de Nemours & Co, Inc
GEORGE C KANTNER, *speaker*
Rohm & Haas Co
D R BAER, *alternate speaker*
E I duPont de Nemours & Co, Inc
F W Allendorf
Geigy Chemical Corp
L B Cook
Millville Mfg Co
J H Davids
Quaker Chemical Co
T H Hart
Hart Products Corp
J B Irvine
Quaker Chemical Co
L F Horn
E I duPont de Nemours & Co, Inc
G Kenyon
Carbic-Hoechst Corp
J L Linton
Carbic-Hoechst Corp
H Morgan
James Lees & Sons Co
S Mooradian
Geigy Chemical Corp
M Rachinsky
Hercules Powder Co
R Sasseville
James Lees & Sons Co
K Schmalenberger
Geigy Chemical Corp
H Schneider
Carbic-Hoechst Corp
E Sommer
Carbic-Hoechst Corp

E NICHOLAS SARANTIS
Chairman, Delaware Valley

GEORGE C KANTNER
Speaker, Delaware Valley

D R BAER
Alternate Speaker, Delaware Valley

BENNETT S GESMER
Chairman-speaker, Northern New England

P Theel
Philadelphia Textile Inst
S G Turnbull Jr
E I duPont de Nemours & Co, Inc
D Winslow
Millville Mfg Co
H G Ward
American Viscose Corp
Motion picture photographed by:
J Coslett
American Viscose Corp
R Firmani
E I duPont de Nemours & Co, Inc
Scenario and editing by:
J Vinyard
E I duPont de Nemours & Co, Inc

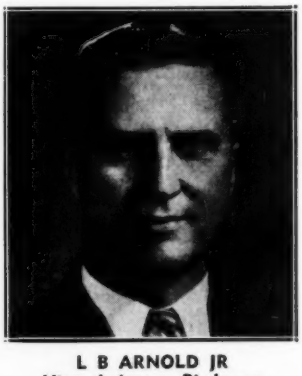
Northern New England Section

BENNETT S GESMER, *chairman & speaker*
Dyecraftsmen, Inc
Laval Ricard-Tessier
Geigy Chemical Corp
Wallace E Birdsall
Geigy Chemical Corp
Alfred J Carbone
Sandoz Inc
William Beck
American Cyanamid Co
Walter N Dow
American Cyanamid Co
Henry F Weidman
General Dyestuff Co
J Wesley Killheffer
E I duPont de Nemours & Co, Inc
Michael E Keane
National Aniline Div
Gerald F Quigley
Agawam Dye Works
John P Ploubides
Hamilton Chemical Co
Victor J Krukonis
E Bernat & Sons
William B Luce Jr
Dyecraftsmen, Inc

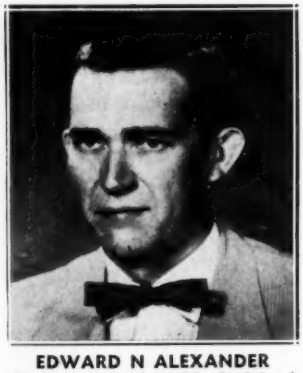
Piedmont Section

R L WAYLAND JR, *project chairman & speaker*
L B ARNOLD JR, *project vice chairman*
Vikon Chemical Co
C L BROWNE, *project secretary*
Celanese Corp of America
F FORTESS, *chairman, Research Committee*
Celanese Corp of America
W E Baldwin
Fairforest Finishing Plant
K D Ballou
American Cyanamid Co
W L Beaumont
Proctor Chemical Co
S W Boddie
Sayles-Biltmore Co
C T Canter
Cone Mills Corp

R L WAYLAND JR
Chairman-speaker, Piedmont



L B ARNOLD JR
Vice chairman, Piedmont



EDWARD N ALEXANDER
Chairman-speaker, Rhode Island

V B Holland
Cannon Mills Co
E E House Jr
C H Patrick Co
E G Jones
Union Bleachery
L T Kelly
Lyman Printing & Finishing Co
G A Lathrop
Old Fort Finishing Co
J H Martin
Verona Dyestuffs
G H Momeier
Graniteville Co
W J Myles
Celanese Corp of America
S H W Nye
Warwick Chemical Co
H Penn
Fieldcrest Mills, Inc
H M Pinner Jr
Graniteville Co
V C Smith
Mooresville Mills
R H Souther
Cone Mills Corp
P B Stam
J P Stevens Co
L A Stanley
Kendall Finishing Plant
C Tomasino
Celanese Corp of America
W P Walker
Cranston Print Works Co
Dan River Mills, Inc
V B Wright Jr
Koppers, Co, Inc
B G Zimmerman
Zimmerman Associates

Rhode Island Section

EDWARD ALEXANDER, *chairman & speaker*
William E Aldrich
Kenneth J Broden
William H Cady
Francis H Casey
Edward C Collins
James A Cooney
William L Cooney
Bris Frankfort
David C Hardman
Raymond Kusiak
Frank J Lachute
Cyril P Mangion
Alden D Nute
Warren N Parsons
Robert H Phillips
James Price Jr
Charles A Robinson
Fernand Schlaeppi
Raymond B Taylorson

Southeastern Section

JAMES H COX, *chairman & speaker*
Auburn Univ
Cecil B Ray
Pepperell Mfg Co
B H Brinkley Jr
Avondale Mills
Carl R Blumenstein
Seydel-Woolley & Co
T A Davis
manufacturers representative
R K Federal
General Dyestuff Co
W B Griffin
Dexter Chemical Corp

Richard E Hudson Jr
West Point Mfg Co
Walter M Israel
Classe Ribbon Works
James L Taylor
Georgia Inst of Technology
William Postman
Georgia Inst of Technology
Gordan E Wallace
Woonsocket Color & Chemical Co
Warren E Tiller
Tennessee Corp
H Gillespie Smith
American Cyanamid Co
William B Amos
Jefferson Mills, Inc
Ralph Champion Jr
Pepperell Mfg Co

JAMES H COX
Chairman-speaker, Southeastern

James C Farrow
Roberts and Co
R B Hallowell
Coats and Clark, Inc
R L Horney
Ciba Co, Inc
T Howard McCamy
Seydel-Woolley & Co
James H Stradley
E I duPont de Nemours & Co, Inc
Leon Tigler
Eagle and Phenix Div
Reeves Bros
William B Woodall Jr
Arnold Hoffman & Co, Inc
A K Haynes
Rohm & Haas Co
William E Fayssoux
Royce Chemical Co

Abstracts of 1960 Intersectional Contest Papers

CONCURRENT DYEING AND FINISHING OF CELLULOSIC TEXTILES

DELAWARE VALLEY SECTION

A process has been developed for the continuous application of all of the presently available classes of cellulose-reactive dyes, and a stabilizing resin finish to fabrics of cotton by drying and curing at accepted commercial speeds produces bright shades having good fastness and excellent "wash-wear" characteristics. The dyes are fixed primarily *within* the fiber. Lightfastness of the dyes is unaffected by the resin. Two mill-scale trials have been made.

NOTE: The commercial runs have been photographed and a motion picture will be shown as part of the oral presentation.

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A STUDY IN UNION DYEING

NORTHERN NEW ENGLAND SECTION

In the relatively short span of the past ten years, the commercial dyer has been compelled to process a continuous procession of new synthetic fibers. To complicate this situation still further, the trend has been to use these synthetic fibers in blends with other synthetics, or in combination with natural fibers.

A review of the classes of dyes recommended for the fast dyeing of protein fiber and polyamides, and the new classes of modified acrylics, acrylic alloys, nytrils and polyvinyl alcohols, discloses that the neutral-dyeing 2:1 premetallized dyes, also relatively newly introduced in the past ten years, have outstanding fastness properties combined with simplicity of application.

This paper discusses the problems involved in union dyeing blends of any two of these fiber classes in the same dyebath with the neutral-dyeing 2:1 premetallized dyes, and specific combinations investigated as important illustrations. Relationships, relative to the partition of dye between fibers of these combinations as effected by varying pH, and with no auxiliaries present in the dyebath, is plotted. Also, the effect on this partition by selected auxiliaries, illustrated. An analysis is made of the significant factors and variables to be considered in this type of union dyeing.

Union dyeing of the above classes of synthetic and natural fibers with 2:1 premetallized dyes is now possible, although for many shades difficult to achieve. The need for more specifically tailored auxiliaries than now available is indicated. Also, more knowledge is needed relative to the auxiliaries' exact behavior in the dyebath at all temperatures, and under varying conditions of electrolyte concentration and pH.

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CHEMICAL MECHANISMS IN CHLORINE RETENTION BY RESIN-TREATED COTTON FABRICS

PIEDMONT SECTION

A study of the reactions involved in "chlorine retention" and "chlorine damage" on resin-treated cotton fabrics has been made to determine their nature and extent and to establish mechanisms for the reactions where possible. Urea-formaldehyde, dimethylol ethyleneurea, modified melamine-formaldehyde, triazone formaldehyde, and tetramethylol acetylenediurea treated fabrics were used in the study. Reactions of resins and model compounds related to resins were also studied *in vitro*.

It has been established that, in addition to chloroamide formation, a reaction takes place in the chlorination bath between the hypochlorite and the resin which results in reduction of active chlorine through destruction of the resin. This reaction becomes more prevalent at elevated temperatures.

Studies of the rate at which chlorine retained by the various resin types is lost on storage and on rinsing at several temperatures and pH values have been made.

The decomposition rates of the chloroamides of the various resins studied and the capacities of the resins themselves to neutralize hydrochloric acid have been determined.

A mechanism for chloroamide decomposition and subsequent hydrochloric acid formation has been pro-

posed which involves thermal dissociation of the chloroamide to produce a chlorine radical which then extracts a hydrogen atom from cellulose to form hydrogen chloride. Data to support the proposed mechanism will be presented. A new method of inhibiting chlorine damage by deactivation of the chlorine radical before it can extract a hydrogen atom from the cellulose substrate to form hydrogen chloride will be demonstrated. Damage to the fabric will be shown to be due primarily to the action of hydrogen chloride at elevated temperature rather than to the oxidative attack of the chlorine radical.

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A STUDY OF FLUOROCARBON FINISHES AND THEIR EFFECT ON DYESTUFFS

RHODE ISLAND SECTION

The recent development of fluorocarbons for the textile finishing industry has caused considerable interest because of their unique property of imparting oil repellency. Several articles have appeared in the literature regarding this work. Commercial products are now available by which oil-repellent finishes can be obtained with normal finishing equipment. Because of limited information regarding practical applications, it was felt that further investigations of these materials in relation to their effect upon other finishing materials and their effect upon dyestuffs would be valuable information for the textile industry.

The purpose of this project is to study the compatibility of fluorocarbons with various finishing agents; their effect upon physical properties of the treated fabrics; their influence, if any, on the shade and colorfastness of dyestuffs, and the effect of dyestuffs upon oil repellency of the fluorocarbon finishes.

Results of this study indicate that fluorocarbons vary widely in their compatibility with other finishing materials. As a class, thermosetting resins show separation in the finishing bath but can be made compatible by the addition of a surface-active agent. Water-repellents generally are compatible. Thermoplastic resins and softeners vary even among similar chemical types.

Oil and water repellency were affected to varying degrees by the incorporation of different finishing compounds with the fluorocarbons. Some types of water-repellents were found to have synergistic effects upon oil and water repellency.

Generally, fluorocarbons were found to have no significant effect upon shade or colorfastness of the dyestuffs tested; and conversely, these dyestuffs were found to have no appreciable effect upon oil and water repellency.

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SELECTION OF DIRECT DYESTUFFS FOR APPLICATION TO UNSULFURED RAYON STAPLE

SOUTHEASTERN SECTION

To study the relative dyeing characteristics of desulfured and undesulfured rayon staple, comparative dyeings were made with sixty-nine fast-to-light direct dyestuffs. These dyed samples were evaluated for shade differences, lightfastness, and washfastness.

It was found that forty-four of these direct dyestuffs gave equivalent shades on desulfured and undesulfured rayon staple. All but two of these forty-four dyestuffs gave identical lightfastness results on both desulfured and undesulfured rayon. The other twenty-five dyestuffs produced significant undesirable shade changes on the undesulfured rayon staple. In general, the dyestuffs that incurred a shade change on undesulfured rayon staple also exhibited poor lightfastness as compared with the same dyes on desulfured rayon. The relative washfastness, however, of each of the sixty-nine dyestuffs on desulfured and undesulfured rayon staple was equal.

All the twenty-five direct dyestuffs which showed shade differences on undesulfured rayon staple were found to be metallic complexes. The remaining forty-four dyestuffs which produced identical shades on both desulfured and undesulfured rayon staple were, with two exceptions, not metallic complexes.

It was discovered that the sulfur compounds "in situ" on the undesulfured fibers do not affect the shade of the metallic complex dyestuffs. The sulfur and/or sulfur compounds must first become dispersed or dissolved in the dyebath before adversely changing the hue of the dyestuff.

"MISS MEMBERSHIP DRIVE" NAMED

BETSY REEVES of Nicetown, Pa, Miss Pennsylvania for 1960-61 in the Miss Universe Pageant, has been named "Miss Membership Drive" for the 1960 AATCC Convention.

Miss Reeves, who will be on hand at AATCC Membership Drive Headquarters in the Sheraton Hotel to welcome new applicants for membership, will be assisted by four young ladies who have been selected to represent the four geographical regions of the Association as follows:

New England Region — Lydia O'Connor

Central Atlantic Region—Janet Hamil

Southern Region—Nancy Todd

Western Region—Marie Drake

BETSY REEVES

Princeton vs Penn

Two ancient Ivy League rivals, Princeton and Penn, will meet at Franklin Field on Saturday, October 8. Those desiring to attend are urged to send their ticket applications direct to the Univ of Pennsylvania. If a sufficient number of AATCC members plan to attend, free transportation will be provided.

Members of the Reception Committee will staff an Information Desk adjacent to Registration in the Connie Mack Room near the entrance to the Exhibit. A card file will be kept on the name of registrants and their hotels.

1960 AATCC DYEING AND FINISHING EXHIBITION

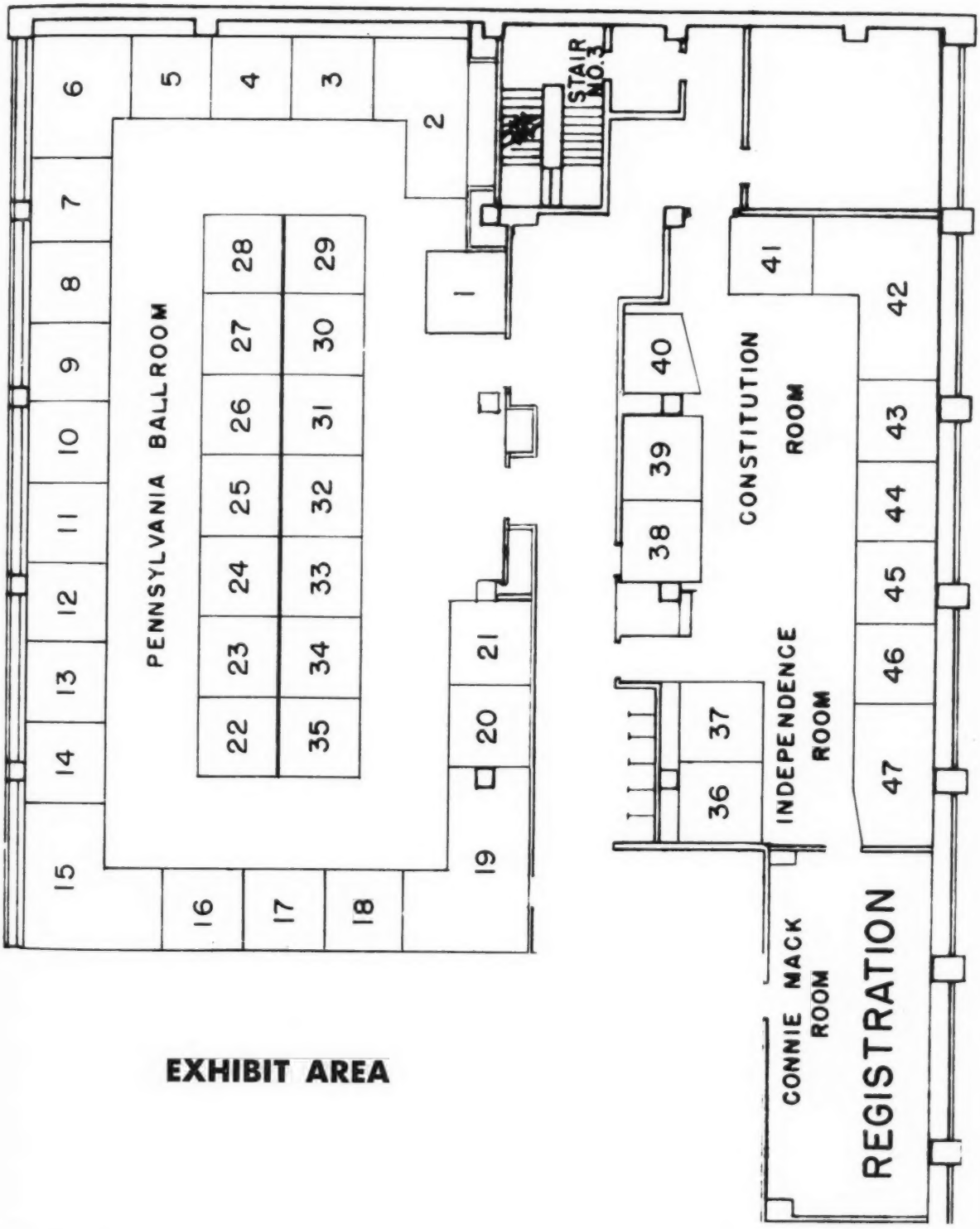

EXHIBIT AREA

The Exhibit will be on the third floor of the Sheraton. Some thirty companies will participate and will show the latest developments in Fabrics, Fibers, Dyestuffs, Chemicals, Instruments, Machinery and Laboratory Equipment.

HOURS

The Exhibit will be open from noon to 9:00 pm Thursday, 10:00 am to 6:00 pm Friday, and from 10:00 am to 3:00 pm Saturday.

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS

PO Box 28
Lowell, Mass
Booths 36-39

The AATCC exhibit will highlight new developments in the work of six research committees: "wash-and wear," resistance to abrasion, colorfastness to washing, water resistance of fabrics, drycleaning test methods and colorfastness to perspiration. The exhibit will also sponsor a demonstration of an automatic color comparator developed under the auspices of the Quartermaster Research and Engineering Command. Members and guests are invited to visit the exhibit and discuss their technical problems.

In attendance: Research officers and the Association's technical service staff.

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AMERICAN DYESTUFF REPORTER

44 East 23rd St
New York 10, N Y
Booth 5

On display will be latest copies of the *American Dyestuff Reporter* and the *AATCC Technical Manual.*

In attendance: Charles A Whitehead, Myron D Reeser, Ernest J Finan, Herbert A Stauderman and Norman A Johnson.

•

AMERICAN VISCOSE CORP

1617 Pennsylvania Blvd
Philadelphia 3, Pa
Booths 27 and 28

Featured will be Avisco's most recently developed rayons: Avril, Avron and Avlin.

In attendance: J H Anderer, I Welsh, W S Sollenberger, R L DePoe, H G Ward and C E Harrison.

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ANALYTICAL MEASUREMENTS, INC

585 Main Street
Chatham, N J
Booth 10

Leuco potential meters and pH meters will be exhibited.

In attendance: Frank G Paully, president; William Stuart, advertising mgr; Steve Nagle, publicity mgr.

•

ARNOLD, HOFFMAN & CO, INC

55 Canal St
Providence 1, R I
Booth 6

This exhibit will consist of two mannequins posed on a revolving table, each dressed fashionably and colorfully, and each in her own appropriate setting.

In attendance: D J Eccleston, sales manager; D L Turner, Atlanta branch manager; J T Rose, Charlotte branch manager; W C Cobb, president; L G Tubbs, Northern branch manager; F P Reed, executive vice president.

ATLAS ELECTRIC DEVICES CO

4114 N Ravenswood Ave
Chicago 13, Ill
Booth 42

On display for the first time will be the new Atlas Xenon Arc Weather-Ometer, the high-temperature Launder-Ometer for dyeings up to 300°F as well as standard tests, perspiration tester, motorized and standard Crockmeter, and a laboratory wringer. In addition the Accelerotor, scorch tester and random tumble pilling tester will be shown.

In attendance: John W Lane, president; J E Norton, vice president; R R Metzinger, engineer; Leo I Monaghan and M J Babey, sales representatives.

•

BECCO CHEMICAL DIVISION
Food Machinery and Chemical Corp

161 East 42nd St
New York 17, N Y
Booth 21

Featured will be hydrogen peroxide bleaching applications for textile industry.

In attendance: A P Shutts, sales manager; J R Hopkins, assistant sales manager; P D Caine, sales promotion manager; F A Kraft, New England manager; M A Noonan, New York manager; E H McMahon, sales representative; J F Whalen, Southern manager; F X Nerney, Southeastern manager; T Quealy, technical assistant.

•

CARBIC-HOECHST CORP

Sheffield St
Mountainside, N J
Booths 31 and 32

On exhibit will be mill runs of prints and dyeings showing complete styling with dyestuffs such as Remazol dyes, specialty Naphtol products, Hostavats, Anthrasols, Indigosols and chrome colors.

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CELANESE CORP OF AMERICA

180 Madison Ave
New York 16, N Y
Booths 11 and 12

•

THE CHEMSTRAND CORP

Decatur, Ala
Booths 33 and 34

On display will be the following: sweaters of Acrilan and Acrilan-16 dyed to two-color effects, color and white using a single dyebath procedure; men's half hose made of blends of Acrilan-16, standard Acrilan and nylon: woolen blends of Acrilan/wool; woolen blends of Acrilan-16/wool; Cumuloft carpets; fabrics of Cadon, Chemstrand's multilobal nylon.

In attendance: C W Gayler, director, applications research sales and service; L Beach, manager, Acrilan

technical sales-service; W Stump, superintendent, dyeing and finishing service; H A Weil, R J Shuster, G A Poovey and D L Wood, technical sales-service dyeing department; E V Burnthall, manager, dyeing and finishing applications research.

●

CIBA CO, INC

Fair Lawn, N J
Booths 24 and 25

Featured will be Cibacron dyes.

In attendance: Personnel from district offices and the home office.

●

DAILY NEWS RECORD

7 East 12th St
New York 3, N Y

Trade newspaper.

●

DAVIDSON AND HEMMENDINGER

2857 Nazareth Rd
Easton, Pa
Booth 47

Two analog computers will be on dispaly. One, a colorant mixture computer (COMIC), is designed for fast, accurate shade matches and production control. It is stated that this instrument will increase production, reduce costs, improve quality, simplify formulas, and eliminate metamerism. The other, a color difference computer, is designed to be used with either spectrophotometers or filter photometers and is said to provide rapid color-difference calculations of particular value in routine quality control where decisions are to be based on color measurements.

In attendance: H Davidson, partner; S Franklin, chief engineer; W Bartlett, engineering associate; R Landry, research associate.

●

DIAMOND CRYSTAL SALT CO

916 South Riverside Ave
St Clair, Mich
Booth 8

Samples of salt products will be on display.

●

FISHER SCIENTIFIC CO

Gulph Rd (Route 23)
King of Prussia, Pa
Booth 14

On display will be the Bausch & Lomb Spectronic 505 ratio recording spectrophotometer, a selection of Mettler balances, and a selection of pH equipment.

In attendance: W R Keck, sale manager; B J McSally, technical specialist; J P Cannon, sales representative.

●

GASTON COUNTY DYEING MACHINE CO

Stanley, N C
Booth 35

Auxiliary dyehouse equipment will be shown. Included will be batch cans, buckets, pails, dippers, pumps, valves, etc. Information will be available on laboratory and dyehouse equipment consisting of package, beam, raw stock, top, tow, tape, skein and cloth dyeing equipment; conventional, semirapid and rapid drying equipment; and other dyehouse auxiliary machines.

In attendance: Walter Newcomb, George Hacker, Ray Craig, Yates Craig, Alfred Rhyne, Robert Angel and members of the engineering staff.

THE GOODYEAR TIRE & RUBBER CO
Chemical Division

Akron 16, O
Booths 16, 17 and 18

This exhibit will feature a variety of textile applications for Chemigum nitrile latices, Pliolite resin and rubber latices, and Pliovic vinyl latices. Textile samples will be used to illustrate the use of these latices in carpet backings, fabric finishes, printing inks, nonwovens, warp sizings, and foam backings. Fibers spun from Vitel polyester resins will also be on display along with a number of garments made from these fibers.

In attendance: J W Bear, Philadelphia district manager; J S Brice, Atlanta district manager; F A Buzzacco and W R King, sales engineers, coatings department; R H Daly, J E Weldon and W T Smith, senior sales representatives; J R Houlette, advertising manager; J E Warner, manager, coatings department; L P Thies, manager, polyester products department.

●

INTERNATIONAL SALT CO

Clarks Summit, Pa
Booth 43

Salt products and Sterling Brinomat, which produces saturated brine from evaporated salt, will be exhibited. Literature on the technical applications of brine will be available.

In attendance: John L Hewitt, William W Harris Jr, Albert J Hulsebosch, and Oliver W McKeown.

●

MANUFACTURERS ENGINEERING AND EQUIPMENT CORP

York Rd and Sunset Lane
Hatboro, Pa
Booth 44

On display will be a color matching computer.

●

MORNINGSTAR-PAISLEY, INC

630 West 51st St
New York 19, N Y
Booth 7

Sizing, finishing and printing specialties will be featured.

In attendance: Lee Kritzer, manager, textile department; M E Stern, manager, sales and technical service; Saul Tessler, chief chemist, textile department; John Snoop, technical printer; Ira M Schafer, technical sales representative.

●

MORTON SALT CO

110 N Wacker Dr
Chicago 6, Ill
Booth 4

This exhibit will be built around several new salt products which have been made available to the textile industry. Morton's engineering and specialist staff will be on hand to discuss the application of these products.

In attendance: J M Culp, staff textile specialist; H W Conn, division sales manager; E R Ravenel, B W Jennings and D M Hegeman, industrial field managers.

●

PERMACHEM CORP

342 Madison Ave
New York 17, N Y
Booth 41

A germicidal treatment will be featured.

In attendance: J P Leach, vice president; Derek E Hoxby, salesman; Raymond F Davis, microbiologist.

●

PUTNAM CHEMICAL CORP

Beacon, N Y
Booth 19

This exhibit will feature Palanil colors for polyester fibers; Basacryl colors for acrylic fibers; Ortolan, Ortol and Basolan colors for animal fibers; Palanthrene colors for cellulosic fibers; Lumatex colors for padding and printing; Ultra Lumatex colors or printing; dyeing and finishing auxiliaries and polymers. Slides of the BASF plant and research facilities in Ludwigshafen/Rhein, Western Germany will be shown as well as a vat package dyeing exhibit demonstrating new auxiliaries: Primasol FP and Basogal P.

In attendance: L E Moody, vice president and general manager; E Schober, technical manager; Jim Ratcliffe, in charge of exhibit salesmen and technicians.

●

REFINED PRODUCTS CO

Lyndhurst, N J
Booth 26

Kara Set resins will be featured and other resins will also be displayed.

In attendance: D M Musser, director of research; B H Bossidy, general manager; A J Ramunda, director, textiles sales division; G H Fine, textile chemist, Charlotte laboratory; F J Anderson Jr and W C Comer Jr, sales representatives in Charlotte area; G Maynard, G Purdy, J Gellene, S Sinatra, G Rhodes and F Bume, sales representatives in the northern areas.

●

RHODIA, INC

60 E 56th St
New York, NY
Booth 45

"Odor engineering in textiles" will be the theme of this exhibit, with specific reference to Alamasks as odor-control agents in resin finishing and other textile applications. Product and cloth samples will be on display.

In attendance: Wm Topken, sales representative; Paul D Jacobs, president, SAB Chemicals Co, Inc, 106 Wales Ave, Jersey City, NJ, exclusive distributors for Rhodia in the U S textile industry.

●

RICHMOND OIL, SOAP & CHEMICAL CO

1041 Frankford Ave
Philadelphia 25, Pa
Booth 22

Various types of yarn, threads, piece goods, and finished fabrics will be diplayed showing the application of various lubricants, scours, dyeing and finishing chemicals, and other textile chemical specialties. Featured will be lubricants for Textralized, textured, stretch, upholstery and lace yarns. Spinning lubricants for wool, worsted and synthetics will also be shown. Washing, scouring, dyeing and finishing procedures for knitted outerwear, hosiery and piece goods will be explained.

In attendance: William Alkus, president; Morton W Levi, chemical engineer; John W Schenkel, chief chemist.

●

ROHM & HAAS CO

222 Washington Sq
Philadelphia 5, Pa
Booth 2

This display will feature the use of R & H acrylic emulsions as fabric backing and binder, and the use of Rhonite resins in the finishing of fabrics.

In attendance: R G Thomas, J T Taylor and H F Lawton.

●

SANDOZ, INC

61 Van Dam St
New York 13, N Y
Booth 15

Drimarene reactives will be featured at this exhibit. Samples of cloth dyed with Sandoz products will be on display. Shade cards, including cards for Drimarene-Z and Drimarene-Y dyes, will be on hand.

In attendance: M H Klein, manager, Philadelphia district sales office, and members of the sales and technical staffs.

●

SCHUYLKILL CHEMICAL CO

2346 Sedgley Ave
Philadelphia 32, Pa
Booth 13

This exhibit will display samples of various types of yarns (cotton, wool, nylon, rayon, etc) dyed with the aid of Skulite. Included will be a carpet and cloth made of yarns dyed with this regulatory exhausting agent.

In attendance: S B Mecca, chemical director; Herbert W Sommer, salesman.

●

TESTFABRICS INC

55 Van Dam St
New York 13, N Y
Booth 40

Textiles and yarns for laboratory use will be exhibited.

In attendance: Werner Klaas, president; Marianne Blunck, demonstrator.

●

ARTHUR H THOMAS CO

Vine St at Third
Philadelphia 5, Pa
Booth 3

Items to be exhibited are: B & L Spectronic 505 color analyzing equipment; pH and redox meters; automatic yarn balance; fast weighing gross and analytical balances; laboratory mixers.

In attendance. E D Haller, sales manager; D E King, regional sales manager; J A Morrow, exhibit manager; J E Barnes, E Kochuba and R Rettew, sales representatives.

●

UNION CARBIDE CHEMICALS CO
Div of Union Carbide Corp

270 Park Ave
New York 17, N Y
Booths 29 and 30

This exhibit will feature a broad line of chemicals for the textile industry.

In attendance: R J Hughes, Southeastern division manager; G S Cooper, Delaware Valley district manager; a number of technical specialists.

●

WALLERSTEIN CO

Wallerstein Sq
Mariners Harbor
Staten Island 3, N Y

Hospitality booth.

Booth 9

In attendance: James J Casserly, J C Robertson and J L Huckabee.

Your Host——

THE DELAWARE VALLEY SECTION

CHARLES A SEIBERT

This brief historical record of the Philadelphia Section covers details of its organization and activities during 1922, the year in which it was formed; a brief review of achievements during the subsequent period; and a chronological list of its chairmen.

INTRODUCTION

THE Delaware Valley Section, AATCC's third largest Section from a standpoint of mebership, will serve as host to the National Convention once again as the Association's members and guests gather at the Sheraton Hotel from October 6th through 8th. This marks the seventh time that the Section has served in this capacity.

The information which follows on the inaugural and very early period of the Section is designed to identify the persons intimately concerned and their contributions, because much of this information is not included in the *Technical Manuals* and reports in the *American Dyestuff Reporter* of that time.

The most important items in the history of the Section subsequent to this early period may be found in the pages of the *Technical Manual* and the *Reporter*, however. These are available in some libraries, from certain charter members, and from Howes Publishing Co, Inc. The Section's members through the secretary shall be pleased to endeavor to furnish omitted information on personal inquiry.

CHRONOLOGICAL SEQUENCE OF ORGANIZATION

JUNE 5, 1922

A petition to the Council for approval to form the Section was prepared by Elmer C Bertolet and signed by:

Sidney S Bailey Jr	Fred L Nuttall
Elmer C Bertolet	Otto Poetzsch
Robert A Carter	Israel Reiner
Walter G Hamlen Jr	Robert E Rose
Charles S Hollander	J Henry Shackelton
Leslie N Hood	Lawrence A Stead
Russell W Hunt	Percival Theel
Albert S Jones	Joeph L Wade
Ralph A MacIntyre	William J Wall
Carl E Medde	L DaCosta Ward
Edwin S Millspaugh	Howard R Watt
Eric J Monaghan	Morton H Wertheim
Charles E Mullin	Clarence C W Wilson

JUNE 9, 1922

The Council approved the petition and appointed Elmer C Bertolet secretary *pro tem* to organize the Section.

NOVEMBER 10, 1922

An organization meeting was held at the Philadelphia Textile School with Elmer C Bertolet acting as chairman, *pro tem*.

Following a brief summary by Mr Bertolet giving the background which led to this meeting, a motion made by Mr Medde and seconded by Dr Hollander resulted in the election of Dr Rose as temporary chairman. A motion by Dr Hollander to proceed with the organization, to be known as the Philadelphia Section, was approved. Dr Rose, who was authorized to appoint a Nominating Committee, selected the following: P Thel, *chairman*, C E Medde, C E Mullin, and C S Hollander.

A motion was made by Mr MacIntyre, and seconded by Dr Hollander, to schedule meetings for the remainder of the season on the first Friday in the months of October, December, February, April and June at 8:15 pm. This was approved.

Following the recommendation of the Nominating Committee, the Section elected the following officers:

Chairman: Robert E Rose
Treasurer: Chas S Hollander
Secretary: Elmer C Bertolet
Sectional Committee: Ralph A MacIntyre, Donald S Ashbrook, Carl E Medde and Charles E Mullin.

The chairman then appointed the following committees:

By-Laws: Chas S Hollander, *chairman:* Walter G Hamlen Jr
Program: Chas E Mullin, *chairman;* Ernest C T Bick, Edwin L Duhring, George H Schuler
Membership: Percival Theel, *chairman;* Ralph A McIntyre, Eric J Monaghan, William J Wall.

Mr Bertolet, representing the Philadelphia Textile School, offered the facilities of the School for immediate future meetings of the Section. The offer was accepted with thanks.

Membership application forms were distributed to all present with the request that they be used in an effort to increase membership.

On motion, the meeting adjourned at 10:15 pm with the next meeting scheduled for Friday, January 5, 1923 at the Philadelphia Textile School.

Those present at the meeting were:

Sidney S Bailey Jr	Chas E Mullin
Elmer C Bertolet	J H McGlinchey
Edwin L Duhring	Fred L Nuttall
Walter G Hamlen Jr	George W Pressell
Chas S Hollander	Frank L Reimlein
Russell W Hunt	R E Rose
Ralph A MacIntyre	George H Schuler
Carl E Medde	Daniel Shea
Eric J Monaghan	Percival Theel

ACHIEVEMENTS

To date the Delaware Valley Section has held 194 recorded technical program meetings with prepared papers and discussions by at least 270 persons on a wide variety of technical subjects. Supplementing this are its annual outings, which are held each Spring.

On the national level, the Delaware Valley Section has participated actively in the annual Intersectional Contest, having been awarded first prize in 1943; second prizes in 1941, 1946, 1947, 1952, 1955 & 1958; and third prizes in 1940, 1942, 1948, 1950, 1951, 1953 and 1959.

The Section has presented the national Association three presidents: Robert E Rose (deceased) who served in 1933 and 1934; Alban Eavenson (deceased) 1938, 1939; and William D Appel, 1944, 1945 and 1946.

Six Section members have served as national vice presidents: Elmer C Bertolet, 1936, 1937; Charles A Seibert, 1942, 1943, 1944; Arthur W Etchells, 1950, 1952, 1953; Frederick V Traut, 1956, 1957, C T Anderson, 1958, 1959; and William S Sollenberger, 1960.

The Olney Medal has been awarded to three members of the Section; Milton Harris in 1945, Charles A Seibert in 1949, and Miles A Dahlen in 1955.

This year marks the seventh time the Section has been host to the National Convention. Previous roles were in 1924, 1929, 1937, 1944, 1949, and 1955.

CHRONOLOGICAL LIST OF CHAIRMEN

Chairmen	*Year*
Robert E Rose	1922
Charles S Hollander	1923
*Elmer C Bertolet	1924
Carl E Medde	1925
Ralph A MacIntyre	1926
Elmer C Bertolet	1927
A Moody Burt	1928-29
Charles A Seibert	1930-31
William A Stringfellow	1932-34
Robret A Bruce	1935
Robert E Sullivan	1936
Herbert S Travis	1937-38
William Ebersold	1939
Harold B Dohner	1940
John F McCoy	1941
Albert E Jones, Jr	1942
James P Conaway	1943
Boyce C Bond	1944
Arthur W Etchells	1945
Curt R Baeringer	1946
Walter F Fancourt 3rd	1947
Arthur M Gordon	1948
James Dixon	1949
Richard B Stehle	1950
A E Raimo	1951
Edward C Diehl	1952
Harry L Morgan	1953
Frederick V Traut	1954-55
Thomas H Hart	1956
Doanld B Robinson	1957
William S Sollenberger	1958
L Kevin McChesney	1959
Clarence A Seibert	1960

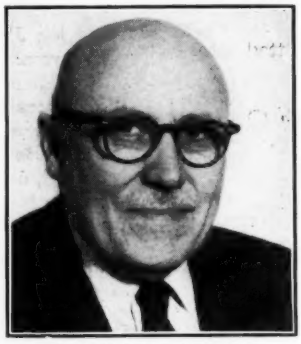
Chairman Emeritus—Percival Theel

*Elmer C Bertolet has been chairman emeritus of the Philadelphia Section since 1934.

SECOND HAROLD C CHAPIN AWARD TO LEONARD S LITTLE

LEONARD S LITTLE will receive AATCC's second Harold C Chapin Award during the Awards Luncheon on Thursday, October 6. AATCC last year presented the first award to Dr Chapin, for whom the service award was named.

This award is presented annually at the AATCC National Convention to a senior member of a least twenty years continuous membership who has contributed outstanding service in enabling the Association to attain the objectives for which it was founded. The selection of the recipient is the unanimous choice of a committee consisting of one member from each of the four National Regions of AATCC. The Harold C Chapin Award is a suitably worded, framed, illuminated scroll.



LEONARD S LITTLE

Mr Little is a textile consultant who resides in New Milford, Conn, and maintains a business office at 101 West 31st St, Suite 1500, New York, NY. He is a charter member of AATCC and has served in many capacities as follows: one of the organizers of the Piedmont Section; chairman of Piedmont Section in 1926; one of three organizers of the Executive Committee on Research; chairman of Executive Committee on Research for two five-year terms; chairman of the President's Advisory Committee; chairman of the Corporate Membership Committee; active in the expansion of the New York Section during the 1940s; National Councilor (New York Section); chairman of the American delegation representing AATCC and ASA at several ISO meeting held abroad and in the United States; chairman of the International Day Committee of the Perkin Centennial held in New York during September 1956.

Mr Little is also an active member of the American Association for Textile Technology and a life member of the American Chemical Society. He has been an active member of the American Society for Testing Materials; the American Standards Association, in which he represented the Synthetic Organic Chemical Manufacturers Association; the National Cotton Manufacturers Association; the Textile Research Institute; chairman of Advisory Committee to the Federal Trade Commission on water repellency; collaborator of the Southern Regional Research Laboratory of the U S Department of Agriculture advising on research projects; and abroad as a member of the Textile Institute and of the Society of Dyers and Colourists.

Mr Little has spent his entire business career in the dyeing and finishing and related chemical industries since his graduation from Brown University in 1907. He has been retained as a textile consultant on a continuous basis by E I duPont de Nemours Co, Inc and by Better Fabrics Testing Bureau since his retirement on January 31, 1951 as manager of the Textile Service Section, Organic Chemicals Department for the DuPont Company.

His previous business experience is as follows: Apponaug Co, as chief chemist and dyer; Narragansett Chemical Co, as president; U S Finishing Co, as superintendent; Pacific Mills Print Works Division, as assistant manager; Pacific Mills, as general manager at Lyman, SC; Joseph Bancroft & Sons Co, as manager; Slatersville Finishing Co, a division of Kendall Mills, as vice president and general manager; U S Finishing Co and its subsidiaries as president and chairman of the board; and Amalgamated Dyestuff and Chemical Manufacturing Co, as treasurer and plant manager.

ARNOLD M SOOKNE—17th OLNEY MEDALIST

ARNOLD M SOOKNE, associate director, Harris Research Laboratories, Washington, DC, will be presented the 17th impression of the Olney Medal during the annual Awards Luncheon, to be held Thursday, October 6, at the Hotel Sheraton, Philadelphia, Pa. The Medalist will respond with an address entitled "Improved Textile Properties from New Chemical Structures".

The Olney Medal, which is endowed by Howes Publishing Co, Inc, publisher of *American Dyestuff Reporter*, is awarded by AATCC in recognition of outstanding achievement in the field of textile chemistry, including the development of chemical agents or chemical processes used in the manufacture of textiles, or methods for their evaluation. Its purposes are to encourage and to afford public recognition of such achievements and contributions, and to be a testimonial to Dr Louis Atwell Olney in recognition of his lifetime of devotion and multitudinous contributions to this field.

Mr Sookne was born October 9, 1915 in New York, NY. After attending public schools in the city, he entered Brooklyn College, receiving his B S degree, Magna Cum Laude, in 1935. Mr Sookne had hopes of continuing his formal education immediately after graduation, but these had to yield temporarily to the economics of the depression years and he gratefully accepted a position at $20 a week as a minor laboratory apprentice (physicist) in the paper section of the National Bureau of Standards in Washington, DC. It was at NBS that he made initial contact with Milton Harris and William D Appel, who were to be important figures in shaping Mr Sookne's career, and who later became the second and eleventh Olney Medalists. He remained at the NBS through 1944, and during this period he was able to attain the master of science degree from George Washington University.

The "textile phase" of the Medalist's career, which began as an AATCC research associate at NBS in 1936, would appear to be a corollary to his name, Sookne, which, literally translated from the Russian, is "melton cloth" or "tailor". Milton Harris was also an AATCC research associate at NBS at the time, and the association of this year's Medalist and Dr Harris has continued from that time. It has been an unusually pleasant and productive one from many aspects, and especially scientifically, as evidenced by numerous joint publications.

Arnold M Sookne (right), 1960 Olney Medalist, is shown chatting with Milton Harris between sessions of the 1955 Chemical Finishing Conference at Atlantic City, NJ

Mr Sookne continued with the National Bureau of Standards as a research associate for the National Research Council from 1937 through 1938, and as a research associate for the Textile Foundation, Inc from 1938 through 1944.

On January 1, 1945, Milton Harris, then director of research of the Textile Foundation, organized a new consulting laboratory—Harris Research Laboratories—and he was joined by Mr Sookne and 10 members of the Foundation staff, who carried with them a background acquired in a vigorous and productive research program at the Bureau of Standards. In the years that have followed, both working space and staff at HRL have multiplied many times, and the organization has become the largest independent, private textile research laboratory in the United States. It has earned a respected place among the textile research establishments of the world, and is frequently visited by scientists from overseas.

For 12 years the laboratory functioned as an independent group conducting research for the textile and allied chemical industries. It numbered among its various clients the Gillette Company and two of its subsidiaries, the Toni Company and Gillette Safety Razor Company, for whom HRL conducted research in the fields of shaving, hair waving, and hair care generally. In November of 1956 the Gillette Company acquired Harris Research Laboratories as an independent subsidiary. However, HRL has continued to function exactly as before, performing research and development on a contract basis for numerous industrial firms in the textile and chemical fields, Government agencies, and the divisions of the Gillette Company. In December 1958, HRL moved into its new home at 6220 Kansas Ave, NE, having outgrown the original, frequently-remodeled facilities first occupied on Taylor Street.

Harris Research Laboratories' research and development services are performed on a project basis, usually involving a continuing relationship with the client. At the present time, the laboratory conducts sponsored research not only in many phases of textile science, but in numerous related fields, such as high-polymer and colloid chemistry and detergency. In these fields, as in the textile fields, the laboratory acts as a bridge between fundamental chemistry and physics on the one hand, and the completed end-use item on the other.

The present staff includes 62 members. The 54 technical people at HRL represent a broad variety of scientific disciplines. These include not only the several branches of chemistry that might be expected, but physics, biology, and many branches of textile technology. The staff includes a number of active members of the Chemical Society of Washington and many other scientific organizations are also represented. Among them are the Washington Academy of

Sciences, the Fiber Society, the American Association of Textile Chemists and Colorists, the American Oil Chemists' Society, the Society of Cosmetic Chemists, the Society of Rheology, and the American Institute of Chemists. Many of the members of the staff are also members of the British Textile Institute and the Chemical Society of England.

Milton Harris is president of Harris Research Laboratories, and Alfred E Brown is vice president and director of research. Mr Sookne is associate director, and Anthony M Schwartz, Lyman Fourt, and Louis R Mizell are assistant directors. All of these individuals have been with HRL since its inception. Moreover, the present staff includes four additional scientists of the original 12 who were with the organization when it started, in 1945.

Harris Research Laboratories' new two-story building at 6220 Kansas Avenue, NE, just two miles north of the Taylor Street location, contains 22,000 sq ft of space and houses a modern chemical and physics laboratory. In addition to the usual equipment commonly found in chemical research laboratories, it contains numerous facilities representative of the hybrid nature of textile science. These include instruments internally developed for the measurement of such properties as the friction of surfaces of individual textile fibers, or for measuring their mechanical properties, and the complex sorts of wind-tunnel equipment necessary for measuring the passage of heat or moisture through a fabric or assembly of clothing. It also includes small-scale textile wet processing equipment, which permits the laboratory worker to experiment on a small-scale with the operations common to the textile finishing industry. Most of the textile testing is performed in a specially controlled constant-temperature, constant-humidity room of the type widely used by textile scientists. There is also a conditioned, dust-free surface chemistry laboratory equipped for studies in this important field. The laboratory is also equipped with instruments for working with radioactive tracers. Reflectometers, goniophotometers, and varied microscopic instruments also are housed in a special room.

Mr Sookne's principal accomplishments have been in the fields of textile and polymer chemistry, namely: 1) studies of the relationship between chemical structure and physical and mechanical properties of fibrous and

Arnold Sookne as a child

polymeric materials; 2) development of methods of fiber evaluation based on single fiber properties, such measurements making possible an understanding of the importance of chemical structure and its influence on the properties of fibers, yarns, and fabrics; 3) development of chemical processes for improved water-repellent fabrics, shrink-resistant wool, and "wash-and-wear" cottons; 4) development of novel chemical compounds, namely epoxide derivatives, for "wash-and-wear" cottons and rayons; and 5) basic chemical studies which helped elucidate the electrophoretic properties of fibers.

The Medalist's accomplishments are indicated by more than forty scientific publications and half a dozen patents. Of particular note are the following:

1) *Relationship between Molecular Weight and Various Mechanical Properties of Cellulose Acetate.*—This work established clearly many of the relationships between molecular chain length and mechanical properties in cellulose acetate and similar linear polymers. In particular, it showed the importance of the number-average molecular weight in influencing mechanical properties, and the deleterious effects of small amounts of low molecular weight materials on the tensile strength and other properties of polymers. This work has been frequently quoted in the literature, and, in fact, has been described as classic in the field. The principles established by these studies have influenced the thinking of scientific workers not only in the field of fibers, but also in plastics and rubbers.

Papers which describe his work in this field are numbers 10, 13, 14, 19, and 20 in the list of publications and patents which follows.

2) *Measurement and Evaluation of Single Fiber Properties.*—The Medalist was one of the earliest proponents in America of single fiber studies. His first paper in 1937 dealt with this subject. Single fiber measurements, and their interpretation, were invaluable in terms of understanding the influence of the chemical structure of fibers on their mechanical properties, such as tensile strength, modulus, set, and resiliency. The Medalist was instrumental in introducing the use of these methods to other laboratories in the textile industry through talks and publications. Moreover, he and his colleagues developed a commercial Fiber Extensometer which was the forerunner of today's widely used instruments. Today no major laboratory is without such an instrument because of its proven value in textile, and especially synthetic, fiber research.

Papers which describe his work in this field are numbers 1, 15, 23, 31, 32, and 33 in the bibliography.

3) *Acidic and Basic Properties of Fibers.*—These studies include a series of papers on the electrophoretic properties of fibers. This work is often quoted and is considered definitive in this field. Papers which describe the studies are numbers 4, 5, 6, 7, 8, 9, 11, and 12 in the bibliography.

4) *Development of Improved Water-Repellent Fabrics.*—This work included development of improved methods for the evaluation of water repellency, namely the "Drop Penetration Tester", and it also contributed to the improvement of water repellent outer garments for the Army. This work was done for the Office of the Quartermaster General, and is described in papers numbered 21, 22, 26, and patents numbered 1, 2, 3, and 4 in the bibliography.

5) *Development of Improved Shrink-Resistant Wool.*—In this work the medalist contributed to the development of an improved control test for shrink resistance in wool (the "Top Shrinkage Test"), and carried out a theoretical study of wool felting that shed much light on the mechanism. He also contributed

Front view of the Sookne's "Shangri-La" in Virginia

Judith, Ethel and David Sookne—photo taken by The Medalist several years ago at Crabtree Falls, Blue Ridge Parkway

Ethel and Arnold Sookne, while honeymooning in Canada

Canoeing on Lake Sunapee, NH, during Gordon Research Conferences

to the development of an improved commercial shrink-resistant process which has been used by mills during the past 12 years. This work resulted in improved shrink-resistant wool for various Army garments used by the Quartermaster General.

Papers which describe this work, and especially the studies directed to understanding the mechanism of wool felting, are numbers 24, 25, 27, 29, 31, 32, 33, 34, 35, and 41 in the bibliography.

6) *Crease-recovery and Wash-and-Wear Treatments for Cotton and Rayon.*—The Medalist has studied numerous epoxides for use in improved "wash-and-wear" treatments for cotton, and has shown that certain epoxides are much superior to others. The process involving one of these epoxides is now in commercial development. The Medalist has also contributed to an understanding of the effect of fabric structure on crease recovery and "wash-and-wear" properties of cotton and rayon fabrics.

Papers which describe this work are numbers 37, 38, 43, and 44 in the bibliography. The medalist also has five pending patent applications dealing with "wash-and-wear" chemicals and processes for using them.

The Medalist also has contributed to the scientific community through his activities in scientific and professional societies, including AATCC. He was active in organizing the Washington Section, AATCC, and has served as chairman, vice chairman, and program committee chairman.

In 1959, he was Technical Program Chairman for the 1959 AATCC Convention in Washington.

Throughout his career, Mr Sookne has presented numerous scientific papers before conventions and at meetings of AATCC, American Chemical Society, The Textile Foundation, Textile Research Institute, and other technical organizations.

Mr Sookne is a fellow of the Textile Institute (England), and a member of The Fiber Society, AATCC, ACS, the Washington Academy of Sciences, and the Society of Sigma Xi (an honorary scientific fraternity). In 1949, he received an Honors Day Award from his alma mater, Brooklyn College, "for his studies on the molecular structure of cellulose and its derivatives and the application of this work to the advancement of a better understanding and use of textile fibers".

The Medalist, his wife, Ethel, whom he met in Washington, and two children, David, 17, and Judith, 12, live at 9208 Saybrook Ave, Silver Spring, Md. David, who has entered the

The Medalist, Judith Sookne, and Herman Bogaty's son at Dark Hollow Falls on Skyline Drive

The nautical Sooknes take a turn in their outboard

University of Rochester, is a mathematician. He is described by his father as a "duplicate bridge expert", and was chess champion of his high school. Judith, a nature enthusiast, is in Eastern Junior High School at Silver Spring.

All the Sooknes are interested in the outdoors, and this has manifested itself in the construction of a cabin in the woods of Virginia in a remote area touching on the Shenandoah National Park, about two hours drive from Washington. Mr Sookne and a long-time friend and associate at HRL, Herman Bogaty, started building the cabin as a joint venture, but Mr Bogarty has since been transferred to Chicago as associate director of research for The Toni Company.

The Medalist, like many good par-

ents, was at one time active in the Boy Scout organization, but in later years this has been superceded by family hikes, boating and picnicing, primarily in the area of their Virginian "Shangri-La".

Among his interests, the Medalist enjoys music, especially folk songs, and he is known to play a "mean" recorder, a small wooden flute.

Mr Sookne is very modest as regards his accomplishments, and he speaks with humility at having been selected to join the ranks of Olney Medalists.

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(40) "Protein Structure in Relation to Some Desirable Fiber and Fabric Properties," by Lyman Fourt, Robert Saxon, and Arnold M Sookne, *Am Dyestuff Reptr 45*, 215 (1956).

(41) "An Appraisal of Shrink-resistant Treatments for Wool" by Arnold M Sookne, *Textile Research J 27*, 652 (1957).

(42) "The Effect of Construction on Certain Stress-strain Properties of Uncoated and Coated Fortisan Fabrics," by J F Krasny, A M Sookne, G D Mallory and J K Phillips, *ibid 27, 983* (1957).

(43) "New Developments in Epoxide 'Wash-Wear' Finishes for Cotton," by J Galligan, A M Sookne, J T Adams Jr, H Guest and G Lourigan, *ibid 29* (March, 1960).

(44) "Effects of Fabric Structure on the 'Wash-and-Wear' Properties of Viscose Lining Fabrics," by A M Sookne, J F Krasny, L Hart and T R Scott Jr, *Am Dyestuff Reptr 49*, No. 13, 23-8 (June 27, 1960).

PATENTS

(1) *U S No. 2,597,614*—A E Brown, A M Sookne, and F W Minor, May 20, 1952—"Method of rendering organic textile material water repellent and composition therefor."

(2) *U S No. 2,599,590*—A M Sookne and A E Brown, June 10, 1952—"Process for rendering proteinaceous textile materials water repellent."

(3) *U S No. 2,615,824*—F W Minor, A M Sookne, M Harris, and G Pyle, Oct 28, 1952—"Method and composition for imparting water resistance to textile material."

(4) *U S No. 2,662,039*—A E Brown, A M Sookne, and F W Minor, December 8, 1953—"Method of rendering organic textile material water repellent and composition therefor."

(5) *U S No. 2,809,089*—J K Phillips and A M Sookne, Oct 8, 1957—"Process of making regenerated cellulose balloon fabric . . ."

(6) *U S No. 2,828,181*—A M Sookne and A E Davis, March 25, 1958—"Process of protecting synthetic protein fibers during steaming and bleaching by applying sodium oxalate."

The Olney Medal is a heavy cast piece bearing a likeness of Dr Louis Atwell Olney, founder of the AATCC, on the front, and a simple inscription on the reverse side.

Details of published works and professional qualifications of those proposed each year for the medal are usually contained in nominating briefs delivered to the Awards Committee. This Committee then considers those nominated and makes a final choice.

Under rules agreed to by the Association and Howes Publishing Co, Inc, the award must be made by unanimous decision of the committee of five, which includes: 1) the Association president (ex-officio); 2) a member of the faculty of an educational institution awarding chemical degrees; 3) an employee of a concern manufacturing chemical products used in textile wet processing; 4) an employee of a concern manufacturing textiles; 5) a member at large of the Association.

The present members of the Committee, and their terms of service from January, 1960, are: 1) Weldon G Helmus, ex-officio; 4) Edward W Lawrence, chairman, one year; 5) Milton Harris, two years; 2) James L Taylor, three years; 3) Henry E Millson, four years. The executive secretary of AATCC is secretary of the Committee without vote. As the term of each selected member expires, the Committee itself elects a successor to serve four years.

THE OLNEY MEDAL

Previous winners of the Olney Medal are:

1944—Louis A Olney
1945—Milton Harris
1946—William H Cady
1947—Edward R Schwarz
1948—Harold M Chase
1949—Charles A Seibert
1950—George L Royer
1951—Raymond W Jacoby
1952—Werner von Bergen
1953—Roland E Derby
1954—William D Appel
1955—Miles A Dahlen
1956—Walter J Hamburger
1957—P J Wood
1958—Henry E Millson
1959—Emery I Valko

TENTH AMERICAN DYESTUFF REPORTER AWARD

THE winner of the tenth annual American Dyestuff Reporter Award will be announced at the Awards Luncheon on Thursday, October 6th, at the Sheraton Hotel, Philadelphia.

Judges for this year's contest, appointed by the AATCC Publications Committee are: Carl Z Draves, Polytechnic Institute of Brooklyn, *Chairman;* Paul B Stam, J P Stevens & Co; and Charles R Williams, Monsanto Chemical Co.

The Award was endowed by the Howes Publishing Company, Inc, as a memorial to Alfred P Howes, founder of the *American Dyestuff Reporter*. Its purpose is to encourage the presentation of the best possible papers before local and national meetings of the Association. The Award, $200 annually, is presented to the author or authors of the paper considered best in the opinion of the judges. Any technical paper presented before a local or national meeting of the AATCC and published in the *Proceedings* as they appear in the *American Dyestuff Reporter* is eligible with the following exceptions: Intersectional Contest papers, papers by employees of the AATCC, reports of research committees. It is a condition of eligibility that the paper have its first publication in the *Proceedings*. Papers published in the *Proceedings* from July 1st of one year to June 30th of the next year are considered in each judging period. Previous winners are shown in the table below.

Year	*Authors*	*Title*	*Where Presented*	*Date of Publication*
1951	Mason Hayek and Fred C Chromey, E I du Pont de Nemours & Co, Inc	"The Measurement of Static Electricity"	1950 National Convention	March 5, 1951
1952	Charles J Lyle, Joseph J Iannarone and Robert J Thomas, E I du Pont de Nemours & Co, Inc	"High-Temperature Dyeing of New Synthetic Fibers"	Rhode Island Section	September 17, 1952
1953	Robert H Blaker, E I du Pont de Nemours & Co, Inc	"Principles of Copper Dyeing of Polyacrylonitrile Fibers: The Controlled Redox-Potential Method"	1952 National Convention	February 2, 1953
1954	Charles L Zimmerman, American Cyanamid Co	"The Application of Dyes to Textile Fibers at High Temperatures"	Metropolitan Section	September 14, 1953
1955	Henry E Millson, American Cyanamid Co	"The Microdyeoscope: Microscopial Observations of Dyeing"	Metropolitan, Southeastern, Mid-West, Delaware Valley and Rhode Island Sections	June 20, 1955
1956	Fred Fortess, Celanese Corp of America	"Dyeing, Finishing and Heat Treating Arnel Triacetate"	Metropolitan Section	August 1, 1955
1957	Irving A Berstein, Controls for Radiation, Inc	"Applications of Radio-Activity in the Textile Industry"	Piedmont Section	June 3, 1957
1958	Emery I Valko, Giuliana S Tesoro and Waldek L Ginilewicz, Onyx Oil and Chemical Co	"Elimination of Static Electricity from Textiles by Chemical Finishing"	1957 National Convention	June 16, 1958
1959	Charles R Williams, Monsanto Chemical Co	"Quantitative Measurement of Fabric Appearance—Practical Evaluation of 'Wash-and-Wear' Characteristics"	Metropolitan Section	February 23, 1959

ENTERTAINMENT TO FOLLOW ANNUAL BANQUET

JACK RUSSELL

BONNIE MURRAY

LILLIAN MURPHY

EARL WILLIAM

JOE SCHIRMER

A musicale, "Great Moments of Broadway", will follow the Annual Banquet, concluding affair of the 1960 Convention, on October 8 in the Hotel Sheraton Ballroom.

Jack Morton Productions, Inc, which handled the entertainment following the Annual Banquet at the Washington Convention in 1959, will produce the musicale, which will feature Jack Russell as the star, Bonnie Murray, Earl William, Lillian Murphy, Joe Schirmer, and a mixed chorus of eight voices.

Jack Russell is a versatile young baritone, who was the singing star for 4½ years on Sid Ceaser's "Your Show of Shows" and also costarred in many Broadway shows, including "Alive and Kicking", "Wonderful Town," and "Almanac." He has been featured in leading supper clubs in Las Vegas, Chicago and Miami Beach, and has become a favorite of the concert and summer theatre stages. This past spring, Mr Russell was featured on the US Steel Hour musical spectacular "American Cowboy" with Fred McMurray and Hoagy Carmichael and also completed a successful engagement in the Cotillion Room of the Hotel Pierre in New York, where he will return again this fall.

Bonnie Murray is one of Broadway's newest and brightest stars. She has starred in several Broadway shows during the last three years and has travelled coast to coast in the road company of "Three for All". She has starred with Bill Hayes for several series on the ABC network. This past summer, Miss Murray was one of the stars of the Canadian Royal Command Performance for Queen Elizabeth during her tour of our neighboring country and also starred in the Rogers and Hammerstein salute in New York.

Lillian Murphy and Earl William, a husband and wife team, will be familiar to those who attended last years' Convention in Washington. Miss Murphy (Mrs William) made her debut on Broadway in the Oscar Hammerstein revival of "Music in the Air", and has appeared in the Gilbert and Sullivan festival with the D'Oyly Carte Company. She was one of five featured soloists on the "International Harvester House" for five years. She has been the featured vocalist in the traditional Christmas production, "The Nativity," at Radio City Music Hall in New York. Her appearances on TV include spots on the Ed Sullivan Show, the Robert Q Lewis Show, and the Garry Moore Show.

Earl William has appeared in five Broadway musicals. including a featured role in Ethel Merman's hit, "Annie Get Your Gun". He toured with the D'Oyly Carte Gilbert and Sullivan Company and has been starred in leading roles with the Kansas City Starlight Opera and the Pittsburgh Civic Light Opera. He has been the featured soloist with symphony orchestras in Rochester, New York, Cleveland, Kansas City and Chicago. On TV he has been seen on the Ed Sullivan show, the Garry Moore show, and was the star of his own network radio show.

Joe Schirmer—"Mr Banjo"—enjoys the distinction of having been hailed by Arthur Godfrey as "one of the few great banjoists now playing." Mr Schirmer, through his artistry on the banjo, has revived and kept alive one of the great traditions of our theatrical heritage and recalls the nostalgic era of great stage entertainment—the great days when vaudeville flourished on Broadway.

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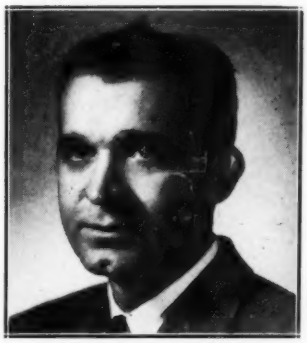


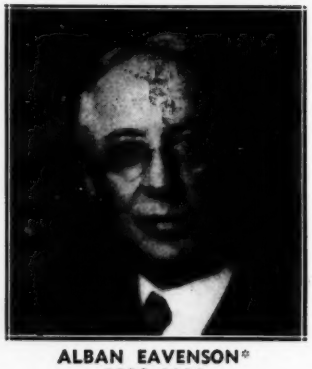
MATTHEW J BABEY
Chairman
Subject & Speakers' Bureau

PAST PRESIDENTS

(An asterisk follows the names of the deceased)

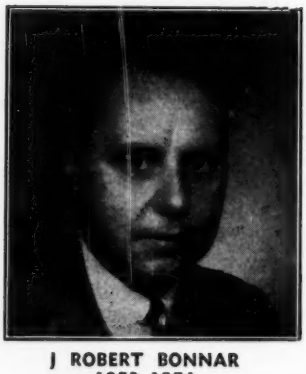
LOUIS A OLNEY*
1922-1927

ELVIN H KILLHEFFER
1928-1930

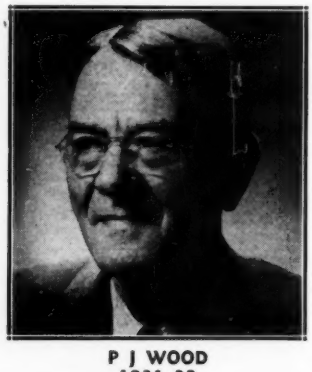


ALBAN EAVENSON*
1938-1939

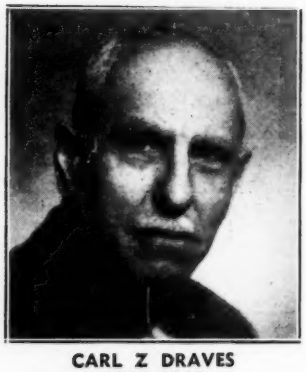
WILLIAM D APPEL
1944-1946



J ROBERT BONNAR
1953-1954



P J WOOD
1931-32



CARL Z DRAVES
1940-1941

HENRY F HERRMANN
1947-1949

RAYMOND W JACOBY*
1955-1956

WILLIAM H CADY
1936-1937

ROBERT E ROSE*
1933-1935

THOMAS R SMITH
1942-1943

C NORRIS RABOLD
1950-1952

GEORGE O LINBERG
1957-1958

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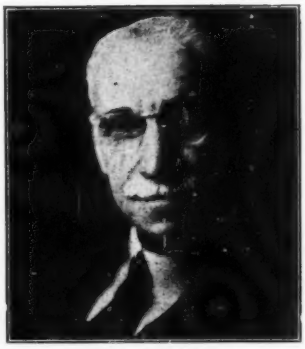

LOUIS A OLNEY
Founder and Past President
1922-1927
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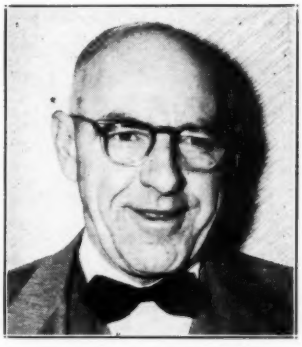

ARTHUR R THOMPSON

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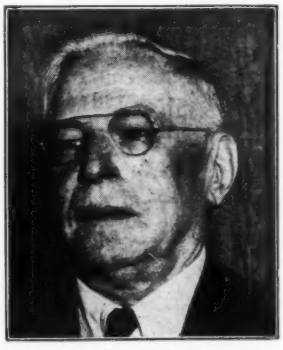

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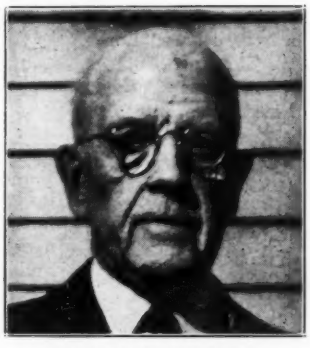

WILLIAM H CADY
Past President (1936-37)
Honorary Member

ALBERT E SAMPSON
Past Treasurer
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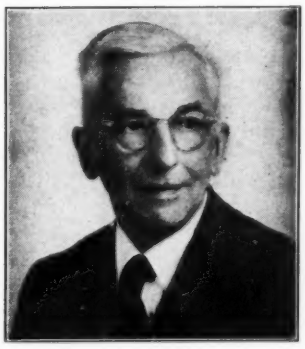


HAROLD C CHAPIN
Past Secretary
Honorary Member

Piedmont Section———

NEW CELLULOSIC FIBERS*

I H WELCH and W S SOLLENBERGER
Technical & Textile Service Department
American Viscose Corporation

Three new rayon staple fibers and one continuous filament yarn have significantly increased rayon's end-use potential. Avron, with its high strength, high elongation and high abrasion resistance, is particularly suitable for blends with the synthetics. When used as the filling yarn with a cotton warp, Avron assures adequate strength retention after "wash-and-wear" resin treatment.

Avril, a high wet modulus fiber, has inherent stability equal to that of cotton, good resistance to caustic treatments and may be stabilized by compressive shrinkage processes.

Avlin, with its flat cross section, permits durable hand modification in blends with other cellulosics and the synthetics without the use of surface resins.

Avicron, a latent crimp continuous filament yarn, is activated by wet processing to develop a unique texture. The crimp and curled texture is permanent and not progressive.

The dyeing and finishing characteristics of each of these rayons is emphasized.

INTRODUCTION

DURING the last five years tremendous strides have been made in expanding the versatility and utility of regenerated cellulosic fibers. Prior to this period some cellulose chemists had predicted that little more could be accomplished toward rayons with greater strength or stability. However, developments during the past few years have made such predictions as obselete as the covered wagon. To cite one such highly publicized product, the present Tyrex tire cord has increased strength of the magnitude of 40% over similar cords of five years ago.

Similarly, other advances in rayon manufacturing technology have given textile fibers with extremely interesting properties for apparel and home furnishing fabrics. The three staple fibers and one continuous filament yarn discussed herein fall into this category.

AVRON

The versatility of rayon as a fiber to complement any blend is well known; however, with the growth of the polyamides, polyesters, and acrylics, with elongations in the neighborhood of 30%, it became evident that a cellulosic fiber with higher tensile and higher elongation was necessary for blends with these fibers. XL, or Avron, as it will be known in fabric, was developed with this combination of properties to yield a tough fiber which possesses improved abrasion and substantially better strength before and after resin treatment. Additionally, with 100% Avron, it is possible to increase the spin limit of a given denier by five to 10 counts over regular rayon. For these reasons luxurious, sheer, "wash-and-wear" fabrics may now be obtained through the use of Avron in combination with cotton or the synthetics.

The cross section of regular rayon will be recalled as showing a high degree of serration (Figure 1) and surface irregularity. Avron has an entirely different appearance, resembling the kidney bean with relatively regular surface (Figure 2). The fiber acquires a semidull appearance as the result of gas voids within its structure.

Stress-strain curves of Avron are compared with regular rayon and cotton in Figure 3. It is evident that conditioned single fiber tensile is over 4.0 grams per denier at 30% extensibility—30% above regular rayon at 2.75 grams per denier and 10% above cotton at 3.65 grams per denier. Wet tensile of Avron as shown in Figure 4 is about 3.0 grams per denier at 37% extension, an increase of 50% above regular rayon. Cotton, of

*Presented before the Piedmont Section on April 3, 1960 at the Hotel Robert E Lee, Winston Salem, NC.

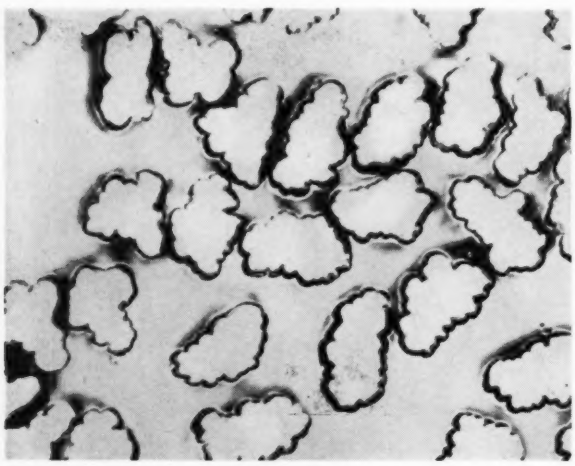


Figure 1

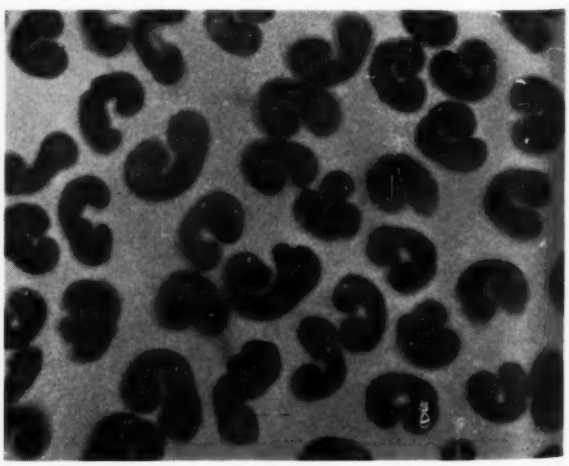


Figure 2

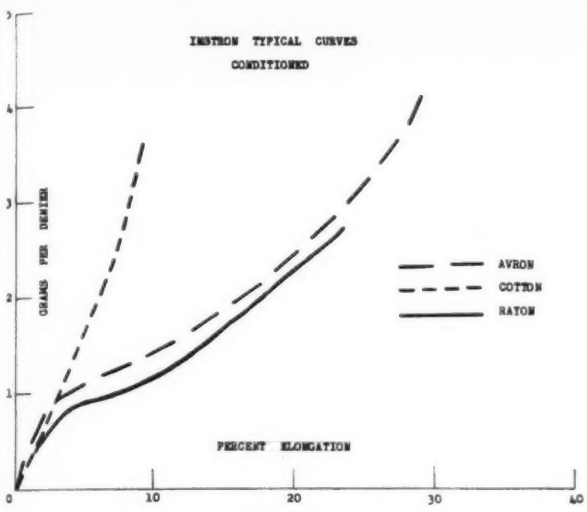


Figure 3

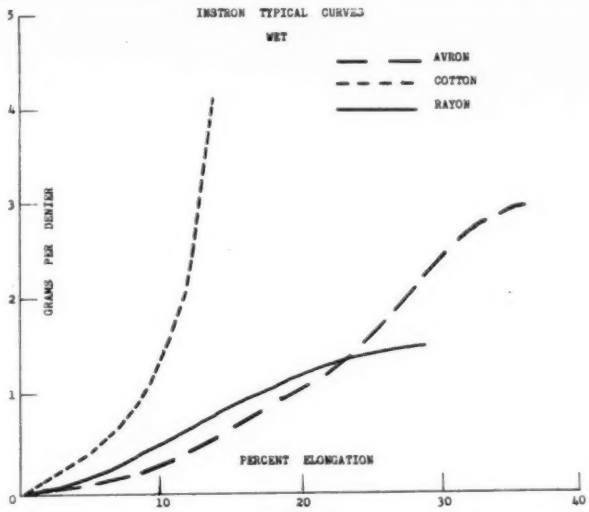


Figure 4

course, increases to over 4.0 grams per denier.

Fabrics of 100% Avron or blends of Avron with the synthetics require no special preparation over that normally used for regular rayon.

All classes of dyes for cellulosic fibers may be used to produce a full range of shades on Avron fabrics and yarns. Dyeing is done on conventional dyeing equipment by the same procedures used for regular rayon. In the dyeing of dark shades and black with direct dyes, the use of additional salt or dye over that used for regular rayon is frequently necessary to achieve the full depth of shade.

Athough, visually, Avron yarns and fabrics appear to be lighter in depth than comparably dyed regular rayon yarns, dyebath transmission studies have shown that total exhaustion of the Avron bath is normally five to 10% greater than that of regular rayon. This apparent depth difference is attributed to Avron's cross section and to the distribution of dye within the fiber.

Actually, appearance-wise, dyed Avron yarns and fabrics are similar to unmercerized cotton in that they tend to be lighter and duller than regular rayon. This is important where Avron is used in combination or blends with cotton to take advantage of the superior dry strength of Avron.

Inasmuch as Avron is a strong, high elongation fiber, it is more affected by overstretching during processing than regular rayon. The same conditions of stretch or strain when applied to a regular rayon fabric might break or tear it, while a fabric made from Avron would only be elongated. This elongation or stretch, however, will result in fabric shrinkage if the fabric is not properly relaxed at final drying.

Fabrics of 100% Avron or blends must be resinated or chemically treated to obtain dimensional stability. Avron accepts and responds to resination very much the same as does regular rayon, both of which show less strength loss than cotton. Avron's higher original strength provides better tensile and much better flex abrasion after resin treatment than either regular rayon or cotton.

With the use of "wash-and-wear" resin finishing on cotton fabrics today there are certain basic cotton constructions which do not have adequate filling tensile strength. Use of 100% Avron filling yields fabrics having the necessary strength.

The preparation of these cotton-warp, Avron-filled fabrics is different than for an all-cotton fabric. Such fabrics should not be kier boiled under pressure; neither should they be mercerized. Mercerizing not only affects the tensile strength adversely, it also stiffens the Avron fiber. It is advisable, when preparing such fabrics, to keep the caustic concentration to a minimum to retain as much of the tensile strength as possible.

TABLE I
Physical properties of three resin-treated 100 x 58 broadcloths

Cotton warp/	*Cotton filling*	*Reg rayon filling*	*Avron filling*
Grab strength (lbs)	18.1	29.6	33.0
Elmendorf tear (lbs)	.85	1.43	1.81
Stoll-flex cycles	157	62	155

A typical example of Avron's contribution to such fabrics is seen in Table I, which depicts the physical properties of three commercially processed resin-treated 100 × 58 broadcloths. The dry tensile strength of the Avron filling is 11% higher than regular rayon and although not shown here, the wet strength was 20% higher than regular rayon fabric. Compared with cotton, Avron has a dry strength advantage of 82%. Wet strength of the Avron fabric was 27% better. Elmendorf tear tests indicate Avron filling to be only 2.6% superior to regular rayon but 110% better than cotton. Abrasion by Stoll-flex test shows Avron and cotton about equal and both approximately 150% better than regular rayon.

Another example is the 6.9 cotton lawn, which, after resination, has a filling tensile of about 18 to 20 pounds; whereas, in the same construction, but using an Avron filling, the tensile strength is about 30 pounds.

The minimum requirements of "wash-wear" fabrics as set forth by the National Association of Shirt, Pajama, and Sport Shirt Manufacturers specify 25-pound filling tensile and one-pound filling tear strength. Avron filling in any of the standard constructions exceeds these requirements by a wide margin.

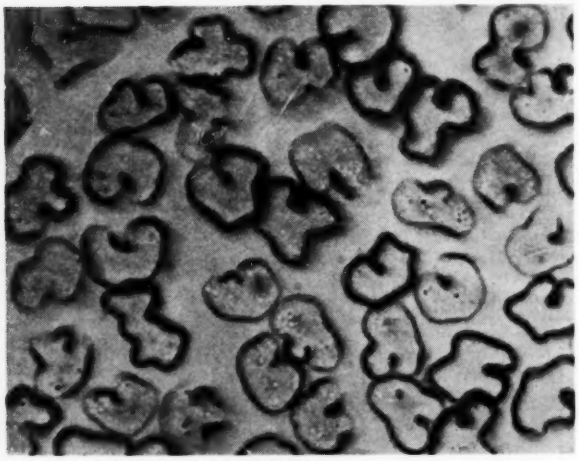


Figure 5

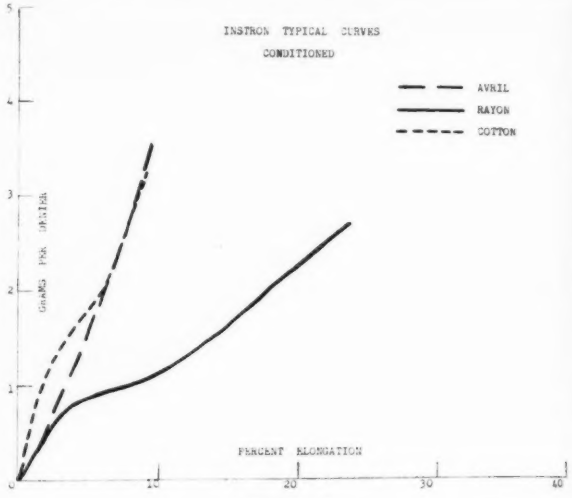


Figure 6

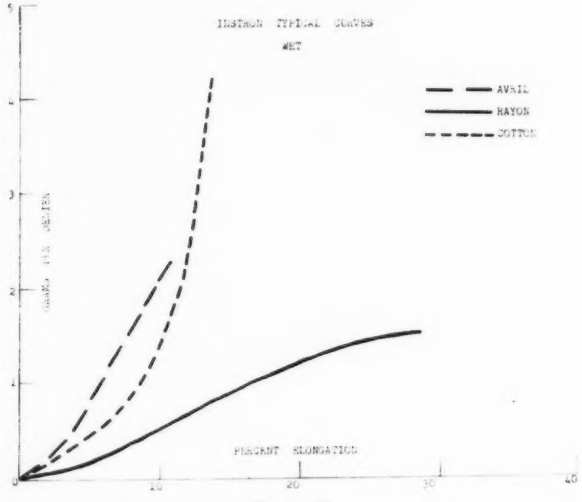


Figure 7

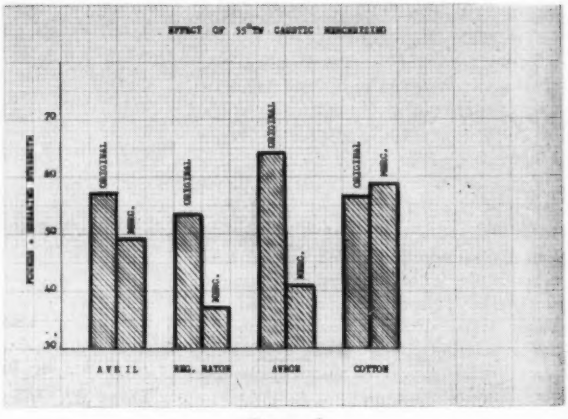


Figure 8

AVRIL

Another new regenerated cellulosic fiber type is identified as Avril or Fiber 40. This fiber represents a whole new concept in cellulose chemistry in that it offers low elongation with dry yarn strengths 10% higher, and wet strength 30% higher than regular rayon. These features complement Avril's inherent stability (equal to that of cotton), its resistance to caustic treatment, and its ability to accept compressive shrinkage. Other regenerated cellulosics in this category are Zantrel, SM-27, and Fiber 500.

In cross section, Avril appears unserrated, but quite irregular in shape, as shown in Figure 5. Again, the semidull appearance is due to gas voids within the fiber.

The stress-strain properties of Avril also place it in the class with cotton. In Figures 6 and 7, these properties of Avril, cotton and regular rayon are compared. Conditioned fiber tests give Avril a tensile strength of 3.20 grams per denier at 9.5% extensibility, compared with cotton with 3.65 grams per denier at 10% extension. Rayon, of course, falls far outside of this area with 2.75 grams per denier at 24.5% extensibility.

In the wet state (Figure 7), Avril provides tensiles of 2.15 grams per denier at 10.5% extensibility and cotton 4.20 grams per denier at 13.0% extension. Regular rayon gives only 1.60 grams per denier with 29.0% extension.

The preparation of Avril fabrics through desizing and scouring is accomplished by techniques and equipment normally used for rayon. It is recommended at this time that bleaching be done with sodium hypochlorite.

Laboratory trials have shown that Avril has significantly better resistance to mercerization than regular rayon. This is not to suggest that fabrics of 100% Avril be mercerized, but rather that, when this fiber is blended with cotton, such fabrics will withstand mercerization with less loss in physical properties than a corresponding blend of cotton and regular rayon.

Figure 8 illustrates a comparison of equivalent regular rayon, Avril, Avron, and cotton fabrics which were subjected to 55° Tw mercerization. Cotton shows a slight strength gain, regular rayon and Avron lose 30-35% of their strength, but Avril shows a loss of only 13%, which is definitely tolerable.

For mercerization of blends, whether they be cotton/Avril or other rayon, it is recommended that afterwashing be done with large volumes

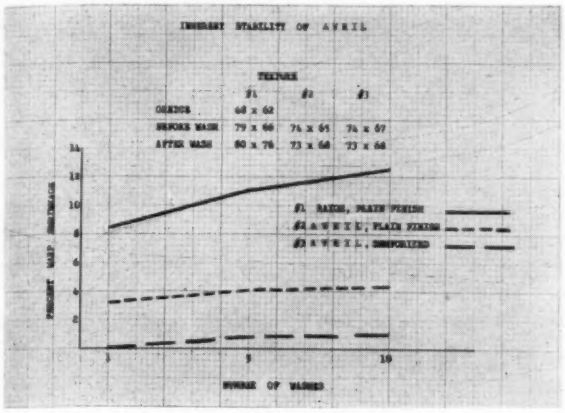


Figure 9

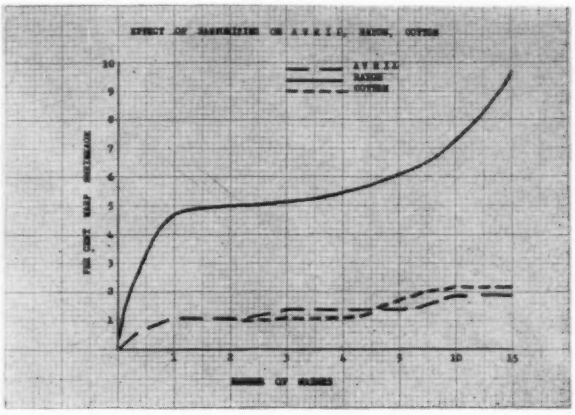


Figure 10

of hot water. Washing conditions are critical since damage to rayons is done when passing through the solubility range at 9 to 11% caustic. Therefore, it is essential to pass through this caustic concentration area as rapidly as possible.

Avril is readily dyed with those dyes normally applied to cellulosic fibers by commonly used techniques. A full range of shades may be obtained, but direct-dyed heavy shades, such as navies and blacks, may require more attention to dye selection. Direct-dyed Avril normally has better wetfastness and equivalent lightfastness to regular rayon.

Direct-dyeing characteristics are different from regular rayon with the rate of exhaustion being slightly slower and shades being somewhat duller in appearance. Comparative dyeing appears to place direct dyes on Avril into three classes with respect to regular rayon. One group includes those dyes which give slightly darker shades on Avril, a second group produces nearly equal shades on both fibers, while a third category includes those dyes with lesser yield on Avril. Naturally, classes I & II provide most economical dyeing, especially in heavy shades. All major dye vendors have been supplied with Avril fabric to conduct such studies. It is suggested that they be consulted for information on their respective products. Dye formulas now in use for regular rayon should not be transferred to Avril fabrics without prior evaluation and modification as necessary.

The low initial wet modulus and high wet extensibility of regular rayon make continuous wet processing difficult. However, with the high wet modulus, the higher wet strength, and the low extensibility of Avril, which are similar to cotton, such continuous wet processes are practical. The pad-steam method of vat dyeing, for example, may be used successfully on Avril fabrics. Exceptional uniformity and solidity of shade are obtained by both vat and pigment dyeing.

As mentioned above, fabrics made from Avril will readily accept compressive shrinkage. Samples of regular rayon, plain finished, and Avril, both plain finished and Sanforized, were subjected to 10 consecutive wash tests. The results are shown in Figure 9. In addition to the excellent stability of the Sanforized Avril, it is evident that, whether Sanforized or plain finished, there is essentially no progressive shrinkage, which illustrates Avril's inherent stability.

It is also evident from the texture counts that the processing shrinkage to produce a stabilized fabric is only 8% from greige to finished fabric. Lower elongation characteristics require processing with less tension, which results in processing shrinkage similar to cotton.

To further substantiate these results, Avril, regular rayon, and cotton were woven into identical 123 × 60 gabardines and processed in a commercial plant where they were prepared, vat dyed and Sanforized. Figure 10 shows the results of these fabrics when subjected to 15 consecutive boiling wash tests. During these tests, regular rayon progresses to almost 10% shrinkage, while Avril parallels cotton to 2% total.

Again the processing shrinkage for the Avril fabric was approximately 8% whereas the regular rayon was approximately 15%.

When crease resistance is desired in Avril fabrics, less resin solids are required than for comparable regular rayon fabrics. Crease-resistant resin formulations for Avril fabrics should not include more than 7% resin solids. To exceed this quantity will result in some loss of tensile strength and abrasion resistance.

As shown previously, Avril is not dependent on resin finishing for stabilization. Therefore, even though applied resin may be removed through repeated laundering, a garment made from Avril will not shrink excessively or with any degree of progression.

Plissé printing may be applied to Avril fabrics without any modification of the conventional process. A 68 × 62 challis fabric when prepared, vat dyed, and processed through a cotton plissé range, shows a good pucker, which is retained through repeated laundering, and has less than 3% total shrinkage.

Avril, when blended with 65% polyester fiber and woven into a standard 110 × 74 shirting, yields a fabric having excellent stability and better "wash-and-wear" properties than a comparable polyester/cotton blend. This fabric, when heat set and compressively shrunk, has warp shrinkage of only 1% and a "wash-wear" rating of 4.5. In such blends Avril has distinct advantages over cotton in that mercerizing is not necessary and over rayon in that no chemical stabilization is required.

AVLIN

The most recent addition to the group of new rayon fibers is known as RD-100. In fabric form, either 100% or blends, it will be known as Avlin. This fiber is unique in that, on drying after being wet processed, fibers in intimate contact tend to bond to each other. No bonding agents, heat or pressure are necessary although combinations of these can enhance the bond.

Figure 11

Figure 12

Photomicrographs (Figure 11) show Avlin to have a cross section radically different from any other rayon. In cross section it has the appearance of a long, collapsed tube, with major axis many times the minor axis. The fiber has very thin, compliant walls which permit adjacent fibers to come into such close contact that strong cohesive forces are established.

For the preparation of Avlin fabrics, no special attention is required over that given to regular rayon.

Avlin is dyed with dyes for cellulose by the same techniques used for regular rayon. As with Avron and Avril, it is indicated that dye formulas developed for regular rayon are not necessarily interchangeable with Avlin and that some modification may be required.

Because of its relatively flat configuration, which imparts luster and crispness, Avlin is visualized as a blending fiber with other cellulosics and the synthetics. As little as 10% will show a change in hand, and for most purposes 10 to 35% seems to be a good blending range. Figure 12 shows a 65% polyester/35% Avlin yarn cross section. It illustrates the fiber intimacy which make possible fabrics with a firmer, crisper hand than regular rayon-blended fabrics.

The hand imparted by Avlin is durable and is not lost through repeated launderings. For instance, the standard linen weave rayons, which must be rather heavily resinated to obtain a desired hand, may lose this hand after several launderings. The use of 30% Avlin with regular rayon yields a fabric having a durable hand and requiring only enough resin to impart the necessary crease resistance.

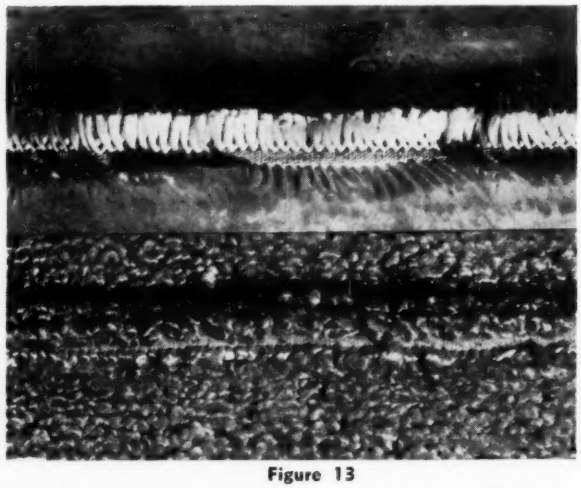


Figure 13

Likewise, a 30% Avlin/70% Orlon blend provides a fabric with greater hand and bulk than a comparable fabric made using 30% regular rayon.

In addition to hand modification, Avlin imparts a glitter when dyed in medium to dark shades. In some instances, this may have the appearance of undyed fibers, but actually they are completely dyed and the glitter is due entirely to light reflectance from the ribbon-like fibers. For some fabrics and end uses this glitter or high lighting may be desirable, while in others it may be objectionable. It is believed that this can be minimized or eliminated by producing a dull fiber. Experiments are already underway in this connection.

Avlin fabrics accept resination as do other rayons. It should be remembered, however, that Avlin does contribute firmness and bulk and so requires very little, if any, of the surface or builder-type resins.

AVICRON

Avicron is the registered trade name for a latent crimp rayon filament yarn. When used in cut pile constructions, this yarn, on wetting with water, is activated to give a unique crimped and curled texture. The texture is not progressive but is permanent and cannot be removed on subsequent wetting. It is available in 1800, 2700, 3600, and 5400 total deniers.

Figure 13 illustrates a greige carpet before wet processing and the same carpet after wet processing. The developed texture is apparent in the latter fabric. These yarns offer the designer of home furnishing or automotive fabrics an interesting tool never before possible with filament yarns. They are currently finding widespread use in such products as throw rugs and area carpeting, bedspreads, upholstery, and in novelty yarns for the domestics and toy trade.

The good wearing qualities of Avicron make it an outstanding candidate for floor covering. Unusual effects may be obtained by plying it with spun yarns of rayon, polyamides, acrylics, and wool. Avicron's ability to shrink and crimp provides a means of obtaining, for example, a face pile of synthetic yarn with a compact base of Avicron. This is economically advantageous since Avicron's cost is considerably less than that of the synthetic yarns. Naturally, combinations such as this also permit cross-dyed effects.

The dyeing charcteristics of Avicron yarns are similar to other rayons. When dyed in combination with spun yarns of similar denier per filament, Avicron will dye slightly heavier, making possible tone-on-tone effects. For clear bright pastel colors, bleaching prior to dyeing may be necessary and is best accomplished through sodium hypochlorite followed by the customary antichlor and scour.

Where permitted by product, the ultimate texture effect of Avicron is obtained through tumble drying. In the case of piece goods, suction extraction without squeezing retains Avicron's texture. If squeeze extraction is employed, some beating is required to retain full texture.

CONCLUSION

The preceding paragraphs have given brief descriptions of four new rayon products, each having specific characteristics to impart a broader range of functional and aesthetic properties to fabrics. The dyeing and finishing of the individual fibers present no real problems. However, an attempt has been made to point out the areas in which they differ from the regular rayons which have been successfully processed for many years. Knowledge of, and attention to, the points of difference will permit processing of these new rayons just as successfully.

MEMBERSHIP APPLICATIONS

AUGUST 18-24, 1960

NEW ENGLAND REGION
Western New England Section

Senior

Albert F Lane Jr—Technologist, prod dev dept, Shell Chem Co, Industrial Chem Div, New York, NY. Sponsors: R J Cullen, G R Ferrante.

SOUTHERN REGION
Piedmont Section

Senior

Gerald A Ferguson—Tech rep, Interchemical Corp, Color & Chem Div, Rock Hill, SC. Sponsors: H A Wells, W B DePass.

C Nathan Ownbey—Dye tech, nylon tex lab, American Enka Corp, Enka, NC. Sponsors: H L Reed, G G Flatow.

Transfer to Junior

James T Swicegood — Research chemist, Dan River Mills Inc, Danville, Va. Sponsors: P Feldmann, J Spangler.

WESTERN REGION
Mid-West Section

Senior

Bush Y Abadir—Senior sales engr, Monsanto Chem Co, organic div, St Louis, Mo. Sponsors: R J Thomas, R J Ellis.

Pacific Southwest Section

Senior

Norman W Garrett Jr—Sales rep, National Aniline Div, Allied Chem Corp, Los Angeles, Calif. Sponsors: W E Kramer, W A Ingham.

NOT AFFILIATED WITH A SECTION

Senior

Kamil Rassoulian — Counterpart, American consulting superintendent of Finishing Div, Tchitsazi Tehran. Tehran, Iran. Sponsors: W J Boler Jr, L J Turner Jr.

Otto Sternbach—Tech rep, dyeing & finishing, duPont de Nemours International SA, Geneva, Switzerland. Sponsors: B F Faris, F G Taylor.

AUGUST 25-31, 1960

CENTRAL ATLANTIC REGION
Hudson-Mohawk Section

Associate

Robert J McFeeley—Plant supt, Gloversville Leather Inc, Gloversville, NY.

Alfred J Studenic—President, Gloversville Leather Inc, Gloversville, NY.

Delaware Valley Section

Senior

Alex Pociluyko—Research chemist, Scott Paper Co, Chester, Pa. Sponsors: R A Hoffman, G N Bond Jr.

Transfer to Senior

Chester J Petkiewicz—Chemist, American Viscose Corp, Marcus Hook, Pa. Sponsors: H H Hall, J W Schappel.

SOUTHERN REGION
Piedmont Section

Senior

Lewis E Green—Shift dyer, Lyman Printing & Finishing Co, Lyman, SC. Sponsors: T H Babb, F E Lizer.

Junior

Gary D May—Lab technician, Lyman Printing & Finishing Co, Lyman, SC. Sponsors: L T Kelly, D B Deaton.

James A Rayburn—Chemist, Cone Mills Corp, Res & Dev Div, Greensboro, NC. Sponsors: E W Jones, J W Weaver.

Georgia Institute of Technology Student Chapter

Student

Malcolm D Caldwell — Student, Georgia Institute of Technology, Atlanta, Ga. Sponsor: William Postman.

Charles D Stewart—Student, Georgia Institute of Technology, Atlanta, Ga. Sponsor: William Postman.

Elected to Membership

SEPTEMBER 8, 1960

CENTRAL ATLANTIC REGION
Delaware Valley Section

Richard R Correll
Michael W Frank
Joseph L Franken

Hudson-Mohawk Section

Jerry M Peck (J)

Metropolitan Section

Eric Altherr
William E Bartle
James B Henderson
Franklin M Soling
Gerhard A Wolff
Richard L Pepin (J)

SOUTHERN REGION
Piedmont Section

K Woodrow Moore
Joel P Kendrick (J)

Georgia Institute of Technology Student Chapter

Jack R Farmer (S)

WESTERN REGION
Mid-West Section

George W Cogswell

Pacific Northwest Section

Fred W Phillips

NOT AFFILIATED WITH A SECTION

Henry Offner
*Tomas Furth**

Minutes———

202nd Meeting
TECHNICAL COMMITTEE ON RESEARCH

THE 202nd meeting of the Technical Committee on Research was convened at 9 am on Friday, May 27, 1960 in the Red Room of the Sheraton-Atlantic Hotel, New York, New York with the chairman presiding. The following were present:

C A Sylvester, chairman, ECR
G S Wham, chairman, TCR
F Fortess, vice-chairman, TCR

E Artim
W N Berard
R E Derby Jr
A H Gaede
N F Getchell
H B Goldstein
C C Gordon
H E Hager
T H Hart
L L Heffner
W A Holst
R N Ingram
G M Kidder
G O Linberg
E M Lynch
V D Lyon
G J Mandikos
E McNeil
T D Miles
H E Millson
J D Mosheim
J E Norton
D J Ott
W G Parks
F A Prisley
G M Richardson
R E Rupp
J W Schappel
C H A Schmitt
C A Seibert
R B Smith
W S Sollenberger
R H Souther
J G Stass
J M Straley
F J Szurek
C R Teichgraber
G R Thompson
C R Trommer
C A Whitehead
H W Wolf
P J Wood
C L Zimmerman

After calling the meeting to order, Chairman Wham asked for approval of the minutes of the 201st TCR meeting as published. A motion to this effect was made and seconded. The motion was adopted.

RESEARCH COMMITTEE CHAIRMEN APPOINTED———

Committee RA48, Evaluation of Fulling Agents
Carlton C Gordon, Albany Felt Co

Committee RA49, Resistance to Insect Pests
Donald J Ott, Geigy Chemical Corp

Committee RA23, Colorfastness to Water
George J Greendonner Jr, Sandoz, Inc.

It was noted that Committee RA23 and RA49 were reactivated since the January 22nd TCR meeting.

APPOINTMENTS TO RESEARCH COMMITTEES———

Committee RA23-Colorfastness to Water
John D Farrell, H Warshaw & Sons, Inc
Louis J Provenza, National Aniline Div
Norman C Simcoe, Ciba Co, Inc

Committee RA29-Resistance to Abrasion
Michel W Avril, E F Drew & Co, Inc

Committee RA31 - Antibacterial Agents
John Hays Bailey, Sterling Winthrop Research Inst
Charles B Beiter, Metal & Thermit Corp
Franz Hausner, Spring City Knitting Co
Alfonso Nicholas Petrocci, Onyx Chemical Corp
Joseph A Ramp, Metalsalts Corp

Committee RA34-Bleaching
John F Synan, Olin Mathieson Chemical Corp

Committee RA35-Damage Caused by Retained Chlorine
Thomas W Mooney, The Procter & Gamble Co

Committee RA42-Dimensional Changes in Textile Fabrics
Harold W Wolf, J P Stevens Co

Committee RA43-Drycleaning Test Methods
Sumner E Shepard, Tennessee Eastman Co

Committee RA45-Identification of Finishes on Textiles
Florence H Forziati, National Bureau of Standards

Committee RA48-Evaluation of Fulling Agents
Robert M Kemp, Huyck Felt Co

Committee RA49-Resistance to Insect Pests
Werner Von Bergen, J P Stevens Co
Thomas F Jacoby, Consumers Union
Hans Luttringhaus, Carbic-Hoechst Corp
Robert E Miller, C H Masland & Sons
A C Miller, Gulf Research & Development Corp
Robert J Norton, Crop Protection Inst

Committee RA56-Evaluation of Finishes for Resistance to Staining and Soiling
Edwin J Grajeck, Minnesota Mining & Mfg Co
Buddy G Pettigrew, Dow-Corning Corp
Vernon C Smith, Mooresville Mills
Fred B Shippee, Gagliardi Research Corp

Committee RA57-Soiling of Carpets
Howard L Eisen, Glamorene, Inc
Richard N Hopper, National Inst of Rug Cleaning

Committee RA61-Wash and Wear
Alice G Balfrey, Deering Milliken Research Corp

NEW TEST METHODS———TCR had approved two new test methods in February, 1960:

Tentative Test Method 85-1960, Colorfastness to Drycleaning, as a revision of AATCC 85-1957T.

Tentative Test Method 99-1960, Relaxation and Felting Shrinkage of Woven or Knitted Wool Textiles, which combines into one test method three former methods: AATCC 41-1952T, AATCC 73-1953T and AATCC 74-1953T.

NEW AATCC INSTRUMENTS———Dr Wham noted the following new or improved AATCC instruments on display in the Red Room:

AATCC Perspiration Tester
AATCC Crockmeter
AATCC Motorized Wringer

Also included on exhibition was a prototype of a one-pint stainless-steel container being evaluated by Committee RA60 for use in washfastness tests. All instruments shown are manufactured by Atlas Electric Devices Co, 4114 N Ravenswood Ave, Chicago 13, Ill.

REMARKS BY ECR CHAIRMAN———ECR Chairman Sylvester noted that he and the executive secretary had met with the assistant general manager and the technical manager of the Society of Automotive Engineers (SAE). As a result, closer cooperation between SAE and AATCC was expected in areas of mutual interest. The SAE would be invited to participate in AATCC research committee work through its representatives.

COMMITTEE RA31, ANTIBACTERIAL AGENTS———Ethel McNeil, chairman, reported as follows:

"It is recognized that the AATCC Test Method 90-1958 has definite limitations. Indeed, such a statement is included in the first paragraph of the published test method. When the

antibacterial agent is a chemical which does not diffuse rapidly through agar, no clear zone of inhibition is produced. Even more important is the fact that it is not a quantitative test.

"At the May 1959 meeting in Washington, DC, the Committee members agreed to try to develop a more quantitative procedure. They also agreed that a Gram negative, as well as a Gram positive bacterium should be used as a test organism. *Staphylococcus aureus* will continue to be the Gram positive test species. *Escherichia coli* was added as the Gram negative one.

"In the February 9, 1959 issue of *American Dyestuff Reporter*, Paul Majors described a chemical titration test for detection of antibacterial agents used on fabrics. The Committee members agreed to conduct a series of interlaboratory tests on a modification of this procedure which would be outlined and distributed by the chairman. The modification was the inclusion of bacterial counts to be made of the inoculum, and of the treated and untreated samples after incubation. The test fabric was acetate tricot which had been treated with an organo-tin disinfectant, applied in the "dope". This fabric was supplied by Colin Browne of the Celanese Corp, a Committee member.

"The results of these tests were discussed at the October meeting of the Committee in Washington, DC. Only a few reports were received. Several members reported that they had no centrifuge, and could not, therefore, use washed cells as an inoculum. There was discussion about size of inoculum and types of culture media. Both species of test organisms had been used.

"Treated and untreated fabric samples were sent out for another interlaboratory test. This time the acetate tricot had been treated with a phenylmercuric disinfectant. It was handwashed six times before being sent out to the members.

"The results of these tests were discussed at a Committee meeting in New York in January 1960. Again only a few reports were received. It was evident that there was lack of uniformity in carrying out the test procedures.

"Several representatives of textile manufacturing companies attended this meeting, and stressed the need for an acceptable and reproducible test method.

"At the request of several Committee members, a workshop was held in the Bacteriology Unit of the Textiles and Clothing Laboratory, Agricultural Research Center, Beltsville, Maryland, April 13-15. Thirteen persons participated. All cultures, media, equipment and fabric samples were uniform. As chairman, I had outlined a procedure and carried out the test just before the others arrived. The procedure excluded the need for a centrifuge. Each person was able to conduct the test at the same time, with the same equipment, and to raise questions whenever necessary. All results were recorded on a blackboard for comparison. A conference room was available for informal discussions on each of the three days. Dr Stuart of the USDA Pesticides Regulation Branch and Dr Molinas of FDA participated in the final discussion period.

"The Committee members expressed themselves as well pleased with the results. Although there was some variation in the size of the inoculum, there was a marked difference between the counts of treated and untreated samples in all cases. I felt that certain inconsistencies in carrying out parts of the procedure accounted for the variation in size of the inoculum. These were noted and discussed.

"The AATCC Test Method 90-1958 was carried out as a comparative procedure. It was negative in all cases.

"For the first time, therefore, the Committee has carried out a quantitative procedure, and obtained a good measure of agreement. After another interlaboratory test, using another fabric, and incorporating suggestions made at the workshop, we hope to present this procedure to the Association for approval.

"Interest in this subject is evidenced by the increase in membership to a current 24 persons."

COMMITTEE RA33, COLORFASTNESS OF TEXTILES TO ATMOSPHERIC CONTAMINANTS——J M Straley, chairman, made the following report:

"In view of the discoveries within the past few years that changes in some colored fabrics when exposed to light were occurring that could not be wholly attributed to the action of light, the Committee has decided to begin a preliminary study of this phenomenon. Several textile fibers will be used, including wool, cellulosics, acetylated cellulose, polyesters, polyamides and polyacrylics colored with various chemical classes of dyes, to be identified by *Colour Index* numbers. These would be exposed to the atmosphere in the absence of light at several of the commercial test stations as well as various other sites, such as industrial centers.

"The choice of the actual dyes to be used was postponed until later. It was felt that it would be very profitable to invite the cooperation of the dye and fiber manufacturers, processors and dyers as well as other AATCC committees, particularly the Committee on Lightfastness."

COMMITTEE RA36, COLOR——Chairman R E Derby Jr presented the following special report on the activities of the Intersociety Color Council, of which AATCC is a member-body:

"The Intersociety Color Council is an organization of 26 societies having mutual interests in color, color science and related topics. The AATCC is a member and is represented at the annual meeting by delegates from the Color Committee. This year's meeting was held at the Philadelphia Museum, College of Arts on April 11th and April 12th. Reports on the color problems and research activities of the various organizations composing the Society were presented. These reports, coming from diverse industries, cumulatively served to emphasize the broad scope of certain color problems, the color changes associated with the widespread use of fluorescent lamps, for example. The AATCC report served to acquaint the other members with the scope of research being carried on by the various AATCC committees. Color problems encountered in the course of this research were enumerated.

"The Color Committee of AATCC has been requested to look into various problems from time to time. At the time these problems were brought to the attention of your chairman it was pointed out that work along these lines was already being undertaken by the ISCC. All members of the Color Committee are actively serving on subcommittees of the Council. Some of the problems of particular interest to the members of AATCC are listed below.

Subcommittee 2—Color Names. This committee has undertaken to prepare reference color samples representing the centroid of each of the 267 ISCC-NBS color name blocks.

Subcommittee 10—Color Aptitude Test. In 1940 a Color Aptitude

Test Committee was set up to develop a test that would evaluate the capabilities of individuals to discriminate small color differences. Such a test has been devised and is commercially available. Since its production, 250 sets have been sold.

Subcommittee 16—Standard Methods for Mounting Textile Samples for Colorimetric Measurement. This committee is compiling a a handbook of existing techniques for proper sampling and color measurement of various types of textile materials. When completed this work should be very useful to anyone contemplating color measurement of textiles.

Subcommittee 18—Colorimetry of Fluorescent Materials. The widespread use of "optical bleaches" requires development of methods for their evaluation. Present techniques are not adequate in many cases. This committee is concerned with this problem from a fundamental viewpoint.

Subcommittee 21 — Standard Practices for Visual Examination of Small Color Differences. This committee (consisting of about 30 members) has undertaken a broad study of the problems in this area. The committee will undertake to define

a) Suitable methods for illumination and viewing in evaluating small color differences.
b) To publish these recommendations based on the committee work in a form that will encourage widescale adoption by suppliers and consumers of colored products.

The recommendations of this committee should be carefully considered for inclusion in the *AATCC Technical Manual.*

Subcommittee 22 — Material Standards for the Colorimetry of Opaque, Translucent and Transparent Materials. This committee is concerned with collecting and evaluating various materials as standards for calibrating colorimeters and spectrophotometers. The increased use of such instrumentation makes the work of this committee imperative if nterlaboratory correlation is to to be attained.

"Each of these committees is active and composed of color authorities from various fields. The results of these studies can be considered to represent the best composite thinking of people who have been professionally engaged in studying these problems for many years. The benefits to the AATCC from its active participation in the ISCC should be clear. Members of the AATCC have made very significant contributions to committee work in the past—especially the late I H Godlove—and it is hoped that this enviable record will be maintained in the future."

COMMITTEE RA45, IDENTIFICATION OF FINISHES ON TEXTILES———Chairman T D Miles reported the following:

"A general method for the identification of finishes in category #2 antibacterial, mildewproof etc has been completed. The method, which includes means of identifying the following general types of inhibitors: metallic, phenolic, antibiotic, quaternary ammonium compounds and several miscellaneous compounds, is being submitted to all members of the committee for their final comment and approval. The majority of the tests included in the method are of the paper chromatographic type, which require no specialized laboratory equipment.

"The committee has chosen sizes as the next finish category for which identification methods will be developed."

COMMITTEE RA49, RESISTANCE TO INSECT PESTS———The following report was presented by Chairman D J Ott.

"In May 1959, the CSMA (Chemical Specialties Manufacturers Association) published a revised version of the 1952 mothproofing test method. Based on cooperative test work of the CSMA mothproofing subcommittee, the revisions mainly involved: 1) standardization of methods of rearing and selecting test size carpet beetle larvae and 2) addition of an addendum on visible damage.

"Recently the AATCC Technical Committee on Research has asked that the reference committee on Resistance to Insect Pests be reactivated to consider adoption of these 1959 CSMA revisions as well as any additional revisions which are needed. One of the important current problems is the lack of uniformity in biological results obtained with various lots of the AATCC moth test cloth. Recent tests with several lots of the moth test cloth and also the 100% worsted fabric have indicated that the latter fabric has given a uniform, high level of feeding while the moth test cloth samples have given variable, generally reduced feeding.

"Tests to check pH, oil content, etc have been conducted at AATCC National Headquarters with two samples of moth test cloth that have given widely divergent biological results. These results indicate no significant differences except for the tighter construction of the sample which gave low feeding results.

"Yesterday, at the first meeting of the newly reactivated committee, it was agreed that it would be necessary to stockpile one large lot of material in order to obtain more uniform biological results. Based on the cooperative tests, the worsted fabric appears to be more satisfactory than the present worsted warp, wool filled moth test cloth. In any case, it would be necessary to make a thorough biological and analytical check before the large lot of material is approved. Based on present figures on consumption of about 200 yards per year, it would be necessary to stockpile at least 1000 yards of material. Arrangement for storage and financing of this large quantity are being investigated by Testfabrics, Inc. There may be some possibility that the largest consumer, the various government laboratories, will offer assistance on these problems.

"Revision of the method for testing carpet samples is being studied in cooperation with members of the ASTM committee on pile floor coverings. Cooperative CSMA carpet tests on treated and untreated carpet samples have been planned and the results should be available for AATCC and ASTM approval this fall."

COMMITTEE RA50, COLORFASTNESS TO LIGHT———G R Thompson, staff liaison, presented the following report for the Committee:

"Mr Rizzo, who is presently engaged in preparing a new lot of Lightfastness Standards, reported that because of difficulty introduced by the dyeing characteristics of one of the colors being used in the project some slight delay would be encountered. However, he is confident that the difficulty can be overcome and that the new standard can be made available by early fall. It was pointed out that the new lot may have a slightly different appearance than did previous lots but that this should not cause concern since the important factor, relative differences in fading rates between the various standards, would remain as before.

"Reports concerning the activities of the subcommittees indicated that their projects were progressing satisfactorily. Much of the Sunlight-

Daylight testing has been completed and awaits evaluation. Samples for the Laboratory Test Program are being distributed. Studies of the Influence of Atmospheric Contaminants on lightfastness testing has produced some interesting results which will make it necessary to carry out additional testing. Use of the yellow methacrylate plates for calibration of weathering test equipment has shown considerable promise and with some slight additional testing should be ready for acceptance.

"The committee discussed the operating characteristics of a new 6000-watt Xenon Tester.

"A member of the committee reported difficulty in switching from an old lot (1589) to a new lot (2101) of NBS calibration paper. It had been necessary to change the time of fading by as much as four hours in order to obtain comparable fading. Other members reported similar troubles. It was suggested that pieces of the old and new lots be returned to the Bureau for a check test and an opinion.

"There was some discussion regarding a request from European interests that AATCC publish the European daylight method for colorfastness to light in the *Technical Manual* along with the AATCC method in view of the adoption of both methods by ISO. Since this question had arisen before, the Committee recommended that definite action be taken in this matter."

Since the question of publication of the European daylight method was a policy matter, it would be referred to the AATCC Executive Committee on Research for consideration and action.

COMMITTEE RA52, COLORFASTNESS TO PERSPIRATION——Chairman C H A Schmitt reported as follows:

"The Committee on Colorfastness to Perspiration (RA52) met May 26, 1960 with seven of the eight members present. Since our previous meeting, interlaboratory tests of the AATCC, British, German and Swiss methods were completed. These were examined yesterday by the committee and the following conclusions drawn:

1) Correlation of the tests of each method made in the different laboratories was very good.

2) The difference in results between the four methods showed:

a) The three continental methods are very similar to each other in their results.

b) On the dyes extremely sensitive to histidine, the ingredient which breaks down copper-containing dyes, we found all continental methods to be much more severe than the AATCC procedure. This more comprehensive study confirms earlier work by the committee.

3) The question still before all workers on the matter of perspiration tests is the validity of the test. Does it duplicate what occurs under actual wearing conditions? This point is expected to be answered by this committee in the body tests now being conducted. By comparing these body tests with the results obtained in the various lab tests referred to above, we hope to arrive at a satisfactory conclusion. A few body test belts were examined at the meeting, but it will take another 3 or 4 months before all tests have been returned for study.

4) The new AATCC Perspiration Tester is now available from Atlas Electric Devices. The use of the new model will be included in the test procedure of the *1960 Technical Manual.*"

COMMITTEE RA56, EVALUATION OF FINISHING FOR RESISTANCE TO STAINING AND SOILING———H B Goldstein reported the following:

"The Task Group on Wet Soiling, under the chairmanship of Charles Zimmerman, went over the results of an interlaboratory series of tests involving home launderings of a variety of fabrics. These fabrics included a number of cottons treated with different finishes which might have been expected to cause wet soiling. There were also included a number of 100% synthetic blends.

"On the basis of superficial examination of the data compiled, it appeared that there was little significant difference in the tendency to wet soil among the various fabrics and finishes tested; however, a definite conclusion cannot be drawn until the data are studied more closely.

"It should be pointed out that the data referred to above applies to home launderings, where relatively low washing temperatures are employed. To test the effect of higher laundering temperatures, it was decided to set up an interlaboratory test involving commercial launderings.

"The Task Group on Oil-Borne Stains, under the chairmanship of Edwin Grajeck, discussed the selection and treatment of fabrics to be used in another series of interlaboratory tests. These tests are intended to determine the extent of correlation between dynamic soiling fabrics with commonly occurring stains versus a laboratory test method intended to predict the degree of staining.

"The meeting of the Task Group as well as the Committee as a whole was well attended, indicating a continuing high level of interest in this subject."

COMMITTEE RA57, SOILING OF CARPETS ——— J W Schappel, chairman, made the following report:

"Following the completion of the first interlaboratory study of carpet soiling, two task groups were appointed to implement the Committee's program. One task group was charged with defining a standardized carpet soiling procedure. The second task group was assigned the study of instrumental methods for evaluation of carpet soiling.

"The task group dealing with carpet soiling procedures presented a standardized procedure to the Committee, which accepted it with certain qualifications at the May 26 meeting. The procedure details the following test conditions:

1) Soiling location
2) Sample size
3) Sample mounting
4) Arrangement and rotation of samples
5) Soiling levels
6) Maintenance
7) Judging

Six members of the Committee have agreed to participate in the second interlaboratory carpet soiling test and this work will be initiated at an early date.

"The program and objectives of the task group on instrumental methods was also presented at this meeting. This program includes:

1) A summarization and review of data obtained on the first interlaboratory carpet soiling test.
2) A study of procedures for measuring reflectance measurements.
3) Investigation of various reflectance measuring instruments as they apply to carpet soiling evaluation.

The task group on instrumental method has been fortunate in obtaining the assistance of R S Hunter.

"The work of the two task groups will be integrated during the course of the carpet soiling study."

COMMITTEE RA58, STREAM SANITATION———Committee Secretary R H Souther reported as follows:

"The Committee met and discussed past work, particularly publication of Waste Guides to Wool Industry, to Commercial Laundries, and to Cotton Textile Industry. A Waste Guide for Synthetic Fiber Industry is being considered.

"The work of representatives of AATCC to the National Technical Task Committee on Industrial Wastes was reviewed by Percival Theel for the purpose of informing members of AATCC about the functions of this cooperative research. Prof Theel also serves as editor of *NTTCIW Quartely News*. R H Souther serves as chairman of NTTCIW Task Group III, Chemical Processing, including chemical manufacturing, soap and glycerine, pulp and paper, tanning, and textiles. This group originates and screens industrial waste research projects for submission to U S Public Health Service, Taft Sanitary Enginering Center, National Institute of Health, universities, and other agencies for further research in problems of interest to industry including textiles. Two projects of particular interest to industry have been accepted as priority research projects—biological lagoon aeration, and modified activated sludge, or biosorption, processes.

"The AATCC Committee on Stream Sanitation approved the following activities in its plan for future work.

1) Review and make additions to Bibliography.
2) Include BOD and other test methods pertaining to textile waste analyses in a revised monograph on 'Analytical Methods'
3) Survey literature and study effects of detergents on stream pollution in cooperation with the chemical industry in a search for better treatment methods.
4) Consider further work on a proposed Waste Guide for Synthetic Textile Industry.

"The Committee welcomes to its meetings and membership all AATCC members interested in participating in the work and objectives of this committee."

COMMITTEE RA60, COLORFASTNESS TO WASHING——— Virgil D Lyon, chairman, reported the following:

"At the May 26th meeting of the Committee, Mr Lane of Atlas Electric Devices Co exhibited the one-pint metal cylinder which is now available. Although they have an adequate supply of one-pint glass jars, the manufacturers have indicated that they may cease manufacture of this item. Mr Lane is supplying several members of the Committee with a sample metal cylinder to determine if comparable results are obtained in either glass or metal containers. These members will make duplicate tests and accumulate exhibits for our examination. If the results are similar, we will consider making the use of either container optional in our standard wash-test procedures.

"R L Stutz presented for discussion the problem of accepting or rejecting fabrics on the basis of the staining of attached effect fibers. This is particularly important in the higher temperature test methods where fibers are included that would never be subjected to such severe conditions. After considerable discussion, it was the opinion of the Committee that all fibers are important and should be evaluated in test methods up to and including 120°F. Above 120°F, silk, wool, nylon, and acetate should not be evaluated unless they would be included in the final garment.

"A motion was passed to poll the Committee by letter as to the desirability of changing Test Method 61-1960 to recommend the use of cotton effect fiber only for the IIIA and IVA Tests. Multifiber test fabric would be optional but acetate, nylon, silk, and wool staining should be disregarded unless one of these fibers is known to be in the final garment.

"At the previous meeting, there was also discussion that excessive staining occurred during a IIIA Wash Test. At that time and on our meeting notice, we had asked that examples of this condition be brought to the meeting for examination. Since no samples were presented at the meeting, this problem is being held open pending evidence that a problem actually does exist."

COMMITTEE RA61, WASH AND WEAR———G M Richardson, chairman, made the following report:

"The Wash and Wear Committee has started to refine its procedures and expand them in the direction of garment testing. The procedures to date have been satisfactory for fabric evaluation but with the growth of the 'wash-and-wear' concept better garment testing is needed so that the term "wash-and-wear" may continue to enjoy its good reputation.

"Accordingly the Committee efforts have been aimed at testing under conditions that more closely approximate those under which garments are viewed. This involves the use of diffused overhead lighting. There has been considerable interest in using Monsanto's plastic replicas as rating comparatives and these, as well as Eastman's photographs, have been included in an interlaboratory test. Ten participating laboratories have just completed their tests involving a comparison of the current AATCC tentative test method 88-1958 with a proposed alternate using diffused lighting. Included are the Monsanto replicas and the Eastman pictures. The results are currently being subjected to statistical analysis and a report should be available in September 1960.

"The Subcommittee on Creases, Seams and Pleats has prepared photographs representing different levels of crease and seam performance. Included are two different types of seams, namely a butt seam and a fell seam. These are rated 1 to 5. Interlaboratory tests are being prepared and samples of fabric are being obtained so that fabric selection may be made. All of the creases will be inserted for the test using a rotary press and all of the seams will be made on the same sewing machine at the same time. Samples will be cut into 15" squares, washed by the various laboratories using the laundering method described in tentative test method 88-1958 and graded in accordance with specified lighting and viewing procedures. Creases will be viewed in a dark room using the viewing board developed by the Committee on Photographs and Lighting. Light from a 500w photo flood lamp (6 feet away) impinges on the sample at eye level at an angle of 45°. Seams will be observed using the overhead lighting procedure. It is planned to consider a statistical approach to the analysis of the data. Laboratory results could be available at the earliest in September and statistical appraisal might be expected by November.

"The original purpose of the Committee on Objective Methods of Evaluation was to evaluate objective methods in terms of the Wash and Wear Committee's objectives and programs. The Committee has observed the Cluett-Peabody "Smooth-

ness Evaluation" and the Hunter "Wrinklemeter". Observations are planned for the LAP method as soon as this can be arranged."

COMMITTEE RA64, WEATHERING OF TEXTILES———L L Heffner, chairman, presented the following report:

"Seven members and eight visitors participated in the discussions of yesterday's meeting. At our previous meeting four areas of study were planned for which subchairmen were selected for two of the areas. Reports were received from the two area subchairmen.

"The study of methods of calibrating accelerated weathering machines has been confined in this period to the adaption of methacrylate plates colored with Quinolin Yellow (Solvent Yellow 33, CI 47000) for this purpose. Basic work with this plate has been completed.

"Contrary to previous reports by others who have studied the use of the plate and reported a linear relationship between change in transmittance and amount of radiation, it has been found that the linear relationship occurs only after an initial exposure of about 40 hours in accelerated weathering devices.

"Thus the use of the plate for standardizing the rate of energy input in a given cycle will require a pre-exposure of the plate to bring its response into the linear portion of the fading curve. The secondary use of the plate as a means of checking the total radiation over an exposure cycle must be cut off at approximately 300 standard fading hours, at which point the linear relationship in the fading curve no longer exists. The nature of the fading curve for the plate is basically the same in all existing types of accelerated devices using a carbon arc as the energy source. However, the Committee feels that an interlaboratory study should be made to achieve a better understanding of the cut-off points in the nonlinear portions of the fading curve before a recommendation of the yellow methacrylate plate as a calibrating standard can be made. This study will proceed immediately with six laboratories participating. All existing types of equipment will be used.

"Surface pitting and encrustation which occurs on the methacrylate plate has been eliminated by the use of a protective covering of a 20-mil film of Mylar, which is replaced at the end of each exposure cycle. This film does not alter the rate or degree of fading of the plate.

"Natural weather exposures of the yellow methacrylate plate have also been conducted in AATCC exposure cabinets. These studies show that the plate performs in natural weathering in the same manner as in accelerated weathering and therefore can be used as a single medium for measuring radiant energy relationships in both natural and accelerated weathering.

"The rate and degree of fading occurring in the exposure cabinets is slightly greater than direct exposure to the elements.

"This is considered to be related to temperature factors. Consequently, we anticipate that the yellow methacrylate plate might provide a means of relating langleys of radiation, standard fading hours with the AATCC Blue Lightfastness Standards, and radiant energy output in devices for accelerated fading and weathering.

"In addition to the interlaboratory tests with accelerated equipment, natural weather exposures of the plates at several outdoor locations will be made, particularly at places where langleys of radiation can be measured. In other cases, the Committee proposes to take advantage of the relationship between langleys of radiation and Standard Fading hours established by the Lightfastness Committee.

"The exposure of fabrics by the Subcommittee on Natural Weathering has been delayed. However plans have been made to start these tests soon.

"The influence of the physical nature of the textile specimen for exposure was discussed. Some disadvantage was reported for the use of yarns instead of fabrics. The possibility of saving time in both natural and accelerated weathering tests by using yarn instead of fabric specimens will be given further study by the committee."

COMMITTEE RA68, DETERMINATION OF ODOR IN RESIN-TREATED FABRICS———The TCR secretary read the following report submitted by Committee Chairman P J Fynn:

"The Committee has evaluated twenty resin-treated fabrics in twenty laboratories and by five proposed methods. This data has been reviewed and a relatively close agreement found between two, namely: the steam-tube method and the the sealed-package method. Further summarization of the data from these two methods of anticipating odor formation was compared with results from fourteen laboratories reporting on actual odor development in the same experimental specimens after six to eight month's storage. In spite of some disparities, fair agreement is shown.

"The Committee feels that the two methods selected are useful and may be made more so by a simple procedure for establishing a rating system of five steps numbered 1 to 5 based upon nonsubjective intensity standards for establishing each of the five steps.

"Further work of the Committee will be directed toward establishing this rating system and its standardizing procedure.

"It was quite generally agreed that a test method based upon such a particularly subjective field as odors cannot be to precisely defined either quantitatively or qualitatively, but it is felt that a practical rating system can be acheived."

COMMITTEE RA32, STATIC ELECTRICITY ON TEXTILES———The TCR secretary read the report submitted by Chairman J Turer, as follows:

"AATCC Tentative Test Method 84-1955, Determination of the Electrical Resistivity of Yarns, has been editorially revised and approved by the Committee, which further recommends that it be raised from Tentative to Standard.

"An attempt to correlate various methods of charge generation is in progress."

A motion was made and seconded that TCR go on record as supporting the recommendation of Committee RA32 that Tentative Test Method 84-1955 be raised to Standard. The motion was adopted.

COMMITTEE RR6, EVALUATION OF CREASING PROPERTIES OF FABRICS———Staff liaison G R Thompson presented the request of Reference Committee RR6 that it be returned to active status to investigate certain suggested improvements regarding AATCC Tentative Test Method 66-1959, Evaluation of the Wrinkle Recovery of Fabrics by means of the Wrinkle Recovery Tester.

A motion was made and seconded that TCR go on record as favoring the reactivation of Committee RR6. The motion was adopted.

ADJOURNMENT———The meeting was adjourned at 10:45 am.

Respectfully submitted,
G J MANDIKOS
Secretary, TCR

Hudson-Mohawk

HUDSON - MOHAWK SECTION held its 12th annual outing and golf tourney at the Antlers Country Club, Amsterdam, NY, on Friday, June 24, 1960 with 118 members and guests in attendance.

The golf tournament produced the following winners:

Low gross (members) — Robert Quiri, Ritter Chemical Co

2nd low gross (member)—Cars Thompson, Mohasco Industries

3rd low gross (member)—Don Resigle, Mohasco Industries

Longest drive—Dick Ritter, Ritter Chemical Co

Nearest pin #6—Frank Frey, Interchemical Corp

Nearest pin #16—Bob Rhodes, W F Fancourt Co

Most 4s (10)—Mase White, Ritter Chemical Co

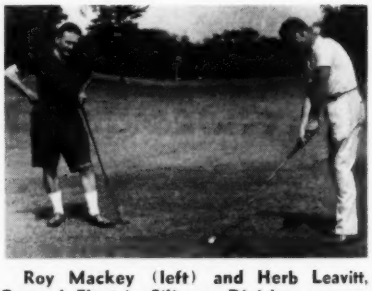
Most 5s (12)— Chris Farrell, Althouse Chemical Co

Low gross (nonmember)—Bob Cox, Solvay Process Div

(continued on page 151)

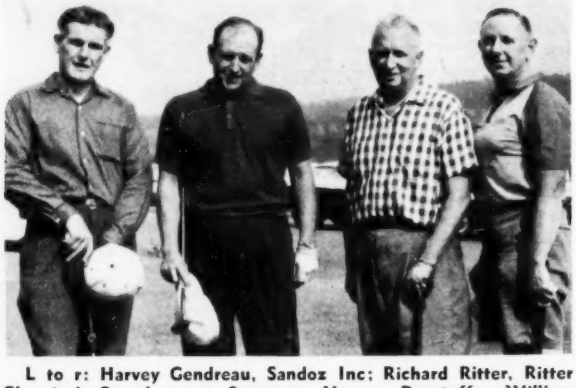
Seated, l to r: K Leslie, Ciba Co, Inc; M Fishman, Lee Dyeing Co; J Hanlon, Mohasco Industries; A DiMeo, Adirondack Finishing Co; F Szurek, Mohasco Industries Standing, l to r: E Chevrette, Apex Chemical Co; A Rooney, Geigy Dyestuffs; A Mafilios, Ritter Chemical Co; R Quiri, Ritter Chemical Co

Vic Christopher, Mohasco Industries, registers with Achilles Mafilios, Ritter Chemical Co, outing cochairman, as Floyd Szurek, Mohasco Industries, H-M Section chairman, looks on



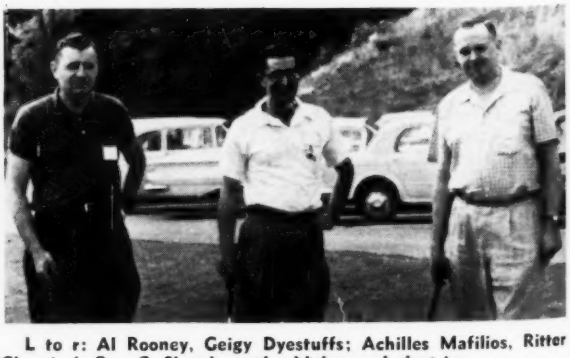
Roy Mackey (left) and Herb Leavitt, General Electric Silicone Division, prepare to tee off

L to r: Cars Thompson, Mohasco Industries, 2nd low gross (members); Ken Leslie, Ciba Co Inc; Robert Quiri, Ritter Chemical Co, winner of Ciba Trophy for low gross among members of the H-M Section

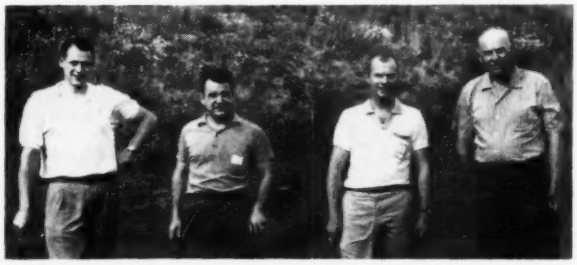


L to r: Harvey Gendreau, Sandoz Inc; Richard Ritter, Ritter Chemical Co; Lennart Swenson, Verona Dyestuffs; William Brommelsiek, Mohasco Industries

Prize winners, l to r: Clark Easterly and Louis Vavala, Johnstown Knitting Corp; Howard Tuchin, Lee Dyeing Co; Jack Sherman, Sherman Chemical Co; Charles Hays, Lee Dyeing Co



L to r: Al Rooney, Geigy Dyestuffs; Achilles Mafilios, Ritter Chemical Co; C Shuttleworth, Mohasco Industries



L to r: Irwin Smith II, Surpass Chemical Co; Louis Vavala and Clark Easterly, Johnstown Knitting Corp; Irwin Smith, Surpass Chemical Co

2nd low gross—Bill Nelson, Ritter Chemical Co

3rd low gross—Perry Ritter, Ritter Chemical Co

Dinner and awarding of prizes followed the afternoon affair.

Cochairmen of the outing were Armand DiMeo, Rebel Dyeing Corp, and Achilles Mafilios, Ritter Chemical Co, Inc, who are secretary and vice chairman of the Section respectively.

Piedmont

PIEDMONT SECTION held its 1960 Outing at the Ocean Forest Hotel, Myrtle Beach, SC, June 3-5 with 516 members, wives, and guests in attendance. The two-day event included a full program of activities, including golf, fishing, swimming, shuffleboard, bingo, and cards.

Friday daytime actvities included golfing at the Dunes Country Club, swimming, fishing and cards. Friday evening was highlighted by a buffet dinner, preceded by a social hour. An informal dance followed the buffet.

The golf tournament was held at the Dunes and Pine Lakes Country Clubs. Heath Alexander won the E J Feeley Trophy with a low gross of 75. Jack Crist Jr also had a 75. The two leaders were followed by Cal Martin, 79; Dane Green 80; and Charlie Sledge, 81.

Low net winners were Art Tinsley, 64; Charlie Richkus, 69; John Bryant, 69; Charlie Reese, 71; and Clyde Whiteside, 71.

Among lady golfers, the winners were Patsy Randleman, Hazel Lanning, Billie Alexander, Mrs Lee Kretzer, Helen Whiteside, and Mrs R Williamson.

Heath Alexander receives E J Feeley Trophy for low gross from L C Reynolds, Piedmont Section chairman

Saturday morning, many of the ladies participated in bingo. This was followed by a ladies' luncheon and a well-attended bridge and canasta party in the afternoon. Golf, shuffleboard, and swimming were also enjoyed on Saturday.

The Outing concluded with a social hour, followed by a banquet and a semiformal dance. The only business transacted was the recommendation of the Nominating Committee presented at the banquet.

E P Lavoie, Wica Chemicals, Inc, served as chairman of the Outing. He was assisted by: W A Colby, Emery Industries; J Feeley III, E J Feeley Co; C F Martin Jr, E J Feeley Co; P D Cunningham, Glyco Products Corp; C H Patrick Jr, C H Patrick Co; O J Goldstein, Mortex Chemicals Co; and Heath Alexander, Southern Dyestuff Corp; R F McKown served as social chairman.

L to r: Bob Hardy, Interchemical Corp; Lloyd Golson, Rock Hill Printing and Finishing Co; Frank Quinlaw, Harchem Div, Wallace & Tiernan Inc; Henry Wells, Interchemical Corp

L to r: Penn Lewis, Burlington Industries; Dave Fillippeli, Mozur Laces; Charles Richkus, Berkshire Color & Chemical Co; Steve Kowal, E F Drew & Co

L to r: Graham Fisher, Delta Finishing Plant; E Correll, Otto B May Inc; Edgar White and Query Ranson, Southern Dyestuff Co

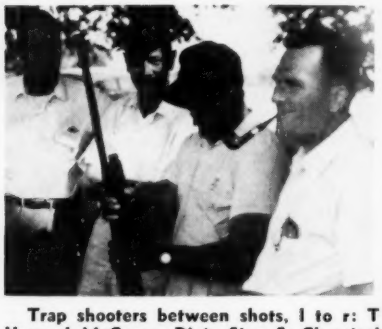
L to r: Ted Giard, Clearwater Finishing Co; W F Thompson, Clearwater Finishing Co; Red Coleman, Blackman-Uhler Co; Arthur Tinsley, Riegel Textile Corp

Southeastern Section Outing • June 10-12, 1960 • Radium Springs, Ga

(Photos courtesy of George H Dockray, *Textile Industries*)

L to r: Carl R Blumenstein, Seydel-Woolley & Co; Richard M Jones, Chemical Services, Inc; Roger Dickenson, Coats & Clark, Inc; Clifford R Smith, Osco Chemical Co, Inc

L to r: H G "Spot" Brown, Eagle & Phenix Finishing Plant; T Max Ferguson, National Aniline Div; Joe Federal, General Dyestuff Co; T Howard McCamy, Dixie Size & Chemical Co



Trap shooters between shots, l to r: T Howard McCamy, Dixie Size & Chemical Co; James W Jordan (high score for millmen), Pepperell Mfg Co; William E Faysoux, Royce Chemical Co; Joe Richardson, Russell Mfg Co

(Photo by Claude B Suttle, Southern States Chemical Co)

Frank H Cooper (left), Dixie Belle Mills, Inc, outing cochairman, and J Elwood Barbre, Pepperell Mfg Co, outing chairman

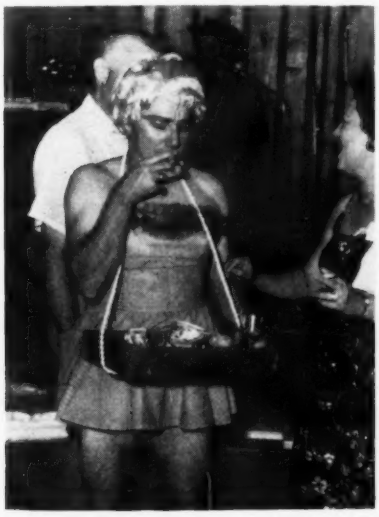
High score for millmen in trap shooting—James W Jordan, Pepperell Mfg Co

Best costume—ladies' division, Wild West Party—Mrs Frank H Cooper. Frank H Cooper, Dixie Belle Mills, Inc, is at left. J Elwood Barbre, Pepperell Mfg Co, outing general chairman, is at right.

Runners-up in horseshoe pitching, doubles, receive prizes: center, Harold W Berry, Cedartown Textiles, Inc; right, William B Griffin, Dexter Chemical Corp. Prizes are presented by Richard M Jones, Chemical Services, Inc, cochairman of the entertainment committee

The Rites of Spring? No. It's Dave Meriwether, Seydel-Woolley & Co, pitching another ringer in the horseshoe tournament

Couple judged to have the best costumes at the Wild West Party, "Colonel" & Mrs Joe Richardson, Russell Mfg Co



Cigarette "girl" at the Wild West Party was H G "Spot" Brown, Eagle & Phenix Finishing Plant

Best costume, men's division, Wild West Party—Lloyd R Greenwood, Southern Dyestuff Corp

Innovation at this year's Summer Outing of the Southeastern Section was a Wild West Party. Each member and guest received $5000 in play money, risked it on games of chance if he chose, then used it to bid on prizes donated by mills and suppliers.

Clockwise: Mr & Mrs Howard Loveless, Crystal Springs Bleachery; Warren Tiller, Tennessee Corp; Mr & Mrs Robert B Hallowell, Coats & Clark, Inc

AATCC Calendar

COUNCIL, COUNCIL COMMITTEES, RESEARCH COMMITTES

Nov 17-18 (Sheraton-Atlantic Hotel, New York, NY); Nov 17—Council Committees and Research Committees; Nov 18 (AM)—ECR, TCR; Nov 18 (PM)—Council and Annual Meeting

NATIONAL CONVENT ONS

Oct 6-8 (Sheraton Hotel, Philadelphia, Pa); Sept 28-30, 1961 (Hotel Statler, Buffalo, NY); 1962 (Southern Region); 1963—Boston; 1964—New York; 1965—Chicago

DELAWARE VALLEY SECTION

Nov 4, Dec 9 (Philadelphia, Pa)

NIAGARA FRONTIER SECTION

Sept 23 (Buffalo, NY); Nov 4 (Annual Business Meeting, Buffalo, NY); Apr 7 (Joint meeting with Ontario Section, CATCC, St Catherines, Ont); May 18 (Buffalo, NY)

NORTHERN NEW ENGLAND SECTION

Oct 21 (Hotel 128, Dedham, Mass—"Customer Service"—Arthur Swenson, J P Stevens & Co, Inc, and P J Fynn, J C Penney Co); Dec 9 (Colonial Country Club, Lynnfield, Mass—"Present-day Economic Outlook in Textiles"—William I Kent, Kent Mfg Co); Jan 20 (Hotel 128, Dedham, Mass—Symposium on "Mechanical and Chemical Finishing of Textile Fabrics"—John J MacDonald, Lowell Technological Inst; D D Gagliardi, Gagliardi Research Corp; and Werner von Bergen, J P Stevens & Co, Inc)

PACIFIC SOUTHWEST SECTION

Sept 24-26 (Outing—Apple Valley, Calif); Nov 18 (Rodger Young Auditorium, Los Angeles, Calif); Dec 10 (dance)

PIEDMONT SECTION

Sept 23-24 (Hotel Charlotte, Charlotte, NC); Jan 21 (Poinsett Hotel, Greenville, SC); April 2 (Washington Duke Hotel, Durham, NC); June 9-10, 1961 (Outing—Grove Park Inn, Asheville, NC); Sept 23, 1961 (Hotel Charlotte, Charlotte, NC)

RHODE ISLAND SECTION

Sept 23 (Management Night); Oct 28 (Providence Engineering Society); Dec 2 (Annual Meeting—Johnson's Hummocks)

SOUTH CENTRAL SECTION

Dec 9 (Hotel Patten, Chattanooga, Tenn)

SOUTHEASTERN SECTION

Dec 3 (Atlanta Athletic Club, Atlanta, Ga)

WESTERN NEW ENGLAND SECTION

Sept 23 (Blake's Restaurant, Springfield, Mass); Oct 21 (Annual Meeting, Rapp's Restaurant, Shelton, Conn); Dec 2 (Rapp's Restaurant, Shelton, Conn)

AATCC LAPEL EMBLEM

YOUR membership lapel emblem is a badge of distinction. Do wear it at Section meetings, national Conventions, on business and social occasions?

Lapel emblems are available at $2.25 and pins at $2.50 at AATCC National Headquarters, P O Box 28, Lowell, Mass. They may also be purchased during the Philadelphia Convention at the National Headquarters' office in the Sheraton Hotel.

Rhode Island

RHODE ISLAND SECTION held its annual outing at the Metacomet Country Club on Friday, June 24, with approximately 500 members and guests in attendance.

John Janket, Putnam Herzl Finishing Co, turned in low gross in the golf tournament with a 74. After winning the tournament last year, he retired the trophy and he now has another leg on a new trophy.

Walter Murray served as outing chairman. He was assisted by Everett Counsel, assistant chairman, and the following committee: Daniel Capuano, dining; Kenneth Borden, publicity; James Shore, donations; William Green, golf; Kenneth Everett, photography.

LeRoy R Hamilton, Mario C Tedeschi

METROPOLITAN SECTION OUTING

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June 17, 1960

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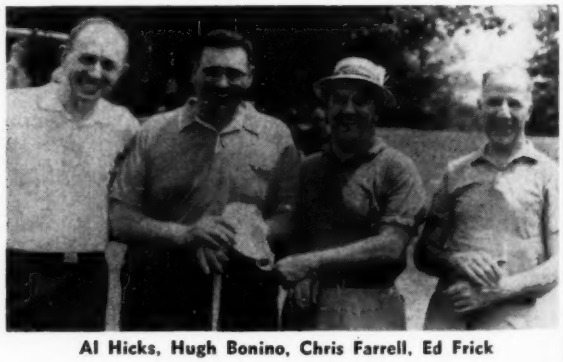
NORTH JERSEY COUNTRY CLUB
Wayne Township, NJ

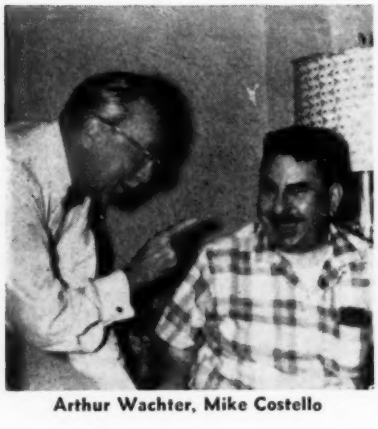
(Photos courtesy of Louis J Dogin, Brook Chemical Div)

Gerard Heine, Michael F Costello

Jim Acquaviva, J Gellene, J Immerman, R Fiory



Al Hicks, Hugh Bonino, Chris Farrell, Ed Frick



Arthur Wachter, Mike Costello

Mike Costello, Chris Farrell

M Mangarelli, C Farrell

ORGANIZATION OF THE AATCC

FOUNDER

LOUIS A OLNEY
(deceased)

COUNCIL OF THE ASSOCIATION

PRESIDENT ..... WELDON G HELMUS, Fair Lawn Finishing Co, Fair Lawn, NJ

VICE PRESIDENTS ..... *(New England Region)*: W GEORGE PARKS, University of Rhode Island, Kingston, RI; *(Central Atlantic Region)*: W S SOLLENBERGER, American Viscose Corp, Marcus Hook, Pa; *(Southern Region)*: A HENRY GAEDE, Laurel Soap Mfg Co, PO Box 1083, Charlotte 1, NC; *(Western Region)*: JOSEPH H JONES, Phoenix Dye Works, 4755 W 150th St, Cleveland 35, O.

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SEPTEMBER SCHERZO
1960

Inter Alia—Inter Nos

P J WOOD

SODA

It is astounding to realize that the first use of the ammonia soda process for the manufacture of soda ash took place in the short space of our own lifetime in the United States. Another notable fact that we gather from that beautiful and informative house organ, Columbia Southern Chemicals, is that the glass industry uses 30% of the entire production of soda ash in this country, or almost a million and a half short tons. This is nearly twice as much as is used in the miscellaneous class of users, including the manufacturers of soaps and cleansers, a class which the man in the street would undoubtedly have placed at the head of the list of consumers of soda ash; probably he is impelled toward that conclusion by the lavish expenditure for TV advertising made by the large manufacturers of household detergents, dishwashing compounds, and home laundry preparations.

Not too far ahead of our own era, the making of "lye" was a home industry, as was indeed the manufacture of soap; in fact, we can distinctly remember that lye was purchasable at the grocer's store, wherewith a passable laundry soap was made that, while it was not ideally suited for washing out childrens' mouths for using naughty words, it did cleanse the house, probably just as well as some of the cleaners on the market today. It had one virtue--it was cheap--the cost of the fat constituent was almost nil, waste fats which might otherwise have been a total loss.

As we remember from our elementary chemistry, nudged a bit by rereading this article, Leblanc, "stimulated by an offer of a substantial prize from the French Academy for finding new methods to manufacture alkalis" (yes, this is the way Columbia Southern and others write it, although we were brought up on alkalies) mixed two parts of anhydrous sodium sulfate, two parts limestone and one part of charcoal and heated in a reverberatory furnace. For 75 years this was the most commonly used method of making soda ash. Leblanc made his discovery in 1787.

In 1861, Solvay, by inventing a way to recover the ammonia used in the ammonia-soda process, made this method practicable. As everybody who knows anything knows, this process rapidly and completely took the place of the Leblanc system.

37% of the soda ash manufactured is consumed by the chemical industry itself in making other chemicals, not the least tonnage of which is that "very present help in time of trouble", bicarbonate. One of our good friends in the silk business took from a 1/2 - 1 teaspoonful every little while. He died young.

CHIP FROM THE WOOD-PILE

It seems to us that the "Wash & Wear" worries will all be solved long before the "Drink & Drive" disasters are eliminated.

CHARACTER

"We are rather tired of the fraudulent way in which we talk of 'personality' instead of 'character'. Personality without moral worth, valued only for attractiveness or impressiveness. Multitudes of people want to know how to glitter, how to be glib. We have been interested more in 'oomphiness' and 'itness' than in wholesomeness and righteousness..... Too few times do we hear it said of anybody He is a splendid character'. We only hear He has a marvellous personality'. It is all very shabby, very shoddy, very fraudulent--and now it is becomming very tiresome".--A Powell Davies, New Outlook

WISE AND WITTY WORKERS IN THE VINEYARD

Sorry to have to say "No" to our old friend Anton Viditz-Ward of the Niagara Frontier Section of AATCC, in answer to a very kind invitation to "assist", as the French say, in the September meeting of that section; next year we are to have the pleasure of attending the first annual AATCC convention to be held in Buffalo.

A word of commendation from an old-time friend and a prodigious reader and library builder, Clayton Hoagland. He tells us he now has a private library of upward of 3000 books--and still growing. Clayton is a former editor of this journal.

In a brief note, Al Rant, who is the present chairman of the Western New England Section AATCC, promised to drop in and "tear a herring" with us, as Joe Jagolinzer has a habit of saying.

Had a lovely picture post-card from John Komninos, showing one of the back streets of Venice; they aren't streets at all, there is no roadway, as you will remember; hence there can be no possible assessments for street paving; but wait, we have an idea that there, just as here, there is someone sitting up nights thinking out new dodges to deprive the taxpayer of more and more of his hard-earned salary, stipend or honorarium, as the case may be.

SARCASM?

Then there was the case of the man who prefaced every remark to his wife, a backseat driver, with the words "Driver to Navigator".

SUCCESS

Monty, as he is familiarly known, or, to give him his full official title, Field Marshal Lord Montgomery, as quoted in "Senior Scholastic", once said. . ."By the time I left school an important principle had begun to penetrate my brain. That was that life is a stern struggle and a boy must be able to stand up to the buffeting. There are many attributes which he must acquire to succeed. Two are vital—hard work and absolute integrity".

From a very different source, Puck writing in Tit-Bits, the leading English humorous weekly, comes this pungent pronouncement. . ."When success turns a person's head he is facing failure".

PROTECTION

According to Quote, there is a local newspaper which concludes each issue with these words. . ."Opinions expressed in this periodical are not necessarily condoned or even understood by the editorial staff".

LAUNDERING CURTAINS

Some time ago our better-1/2 invested in several pairs of Dacron polyester fiber curtains. As the chemist of the partnership, we were invited to exercise our prowess in the home-laundering of said curtains. Meg felt they might be totally ruined in the Westinghouse, prophesying that they could be creased and crumpled beyond redemption.

From what we had seen of this sturdy fiber in handling it in the laboratory in various wet-treatment processes, we had reason to believe that it would not suffer greatly, if at all, in the washing proper and subsequent rinsing. Our only fear was that the hydro-extracting might introduce creases in the wet fabric that might be hard to remove.

So we put the curtains in the washer and carried the process as far as just before the extracting, took them out and found no trace of creases up to this point. One curtain, put back and extracted showed no signs of hard creases or "cracking" of the fabric. So, in went the whole batch for extracting and we stood by with crossed fingers to await the result.

Examination of one curtain demonstrated that we would not have to leave our happy home as a result of the experiment, at any rate. In fact we were so set up with the appearance of the batch that we even tried running for a short spell with the drying phase in operation. This removed the water to some extent. Still no creasing.

Then the curtains were dry enough to hang on the rods over the windows without any dripping. Result, good. Procedure adopted as standard.

In a joint meeting of the makers of synthetic and other detergents and several of the better-known commercial laundries in West Germany, observations regarding the washing of synthetic fiber curtains were discussed as follows.

Printed instructions for handling curtains of the type under discussion in the form of tickets to be sewed to the articles after manufacture seemed to have been very little used. In the ensuing consideration of the matter the following method was agreed upon:

> The washing can be performed in a rotary laundry machine without divisions (an open drum) without hydroextraction.
>
> Centrifuging can lead to creation of creases. Exhaustive trials have shown that it is possible to dry in the tumbler at a temperature of 40°C.
>
> Any creases that occur can be removed by treatment on the steam press not on on the hot calander.
>
> As detergents those intended for washing delicate materials are not as good as alkaline washing compounds containing phosphates or nonionic compounds with complex phosphates.

A set of instructions was evolved covering the following points. Identification of the fibers in curtains (synthetic or not synthetic) - these articles should not be mixed with regular laundry items for washing but should be washed alone. The machine should not be overloaded. Bath ratio should be 1:30 to 1:40 - in other words, a long bath. According to degree of soiling, rinse one or more times in cold water before washing; wash with phosphate-based detergent at 40°C; rinse with clear water; do not extract - do not let the curtains lie wet, as this gives rise to creasing; they can be hung up to dry in the open; drying can also take place in the tumbler with a strong draft of air at 70-90°C continuing to run until the curtains have cooled to room temperature.

We like our system of hanging the curtains in place in the wet condition right after the washing and extracting cycle is completed. We have washed them several times during the last year and they still look new.---Q.E.F.

Abstracts

Meraklon—a New Synthetic Fiber Introduced by Montecatini Group

Anon, *Can Textile J 77*, 44, May 27, 1960

Details are announced of a new Italian synthetic fiber which is being produced under the trade name "Meraklon". It is planned to start production also in the U S, where a plant is under construction at Neal, W Va.

Meraklon, a polypropylene fiber, is derived from petroleum and comes close to being competitive with regenerated cellulose fibers. Its properties include a low sp gr (0.91), good elasticity and resilience, high tenacity and abrasion resistance, and in common with some other synthetics, resistance to acids, alkalis, mildew and insects.

It is stated that Meraklon can be processed without any trouble arising from static electricity, and that it is also free from pilling in the finished garment.

The fiber is produced in both staple and continuous filament form, and can also be spun dyed. Details of its dyeing properties appear to be lacking.

It is being used in knitwear and dress goods, as well as in upholstery, carpets and blankets, and is said to have a soft hand which is comparable with that of wool.

Fabrics made with Meraklon are not prone to creasing, and have good dimensional stability. They may be washed in household washing machines, and dry quickly.

•

Correlation between Colorfastness and Structure of Anthraquinone Blue Disperse Dyes

Salvin, V S and Walker, R A, *Textile Research J 30*, 381-8, May, 1960

Disperse blue dyes which are derivatives of anthraquinone have long been used on acetate fibers; recently this has been extended to include the dyeing of both triacetate and polyester fibers.

The fading of these dyes on acetate, when exposed to atmospheres contaminated with industrial wastes, has led to a search for blue anthraquinone structures that would resist this change. Nitrogen dioxide has been shown to be the active agent causing the fading.

Extensive investigation has established that certain of the amino anthraquinone derivatives are much more resistant to the action of nitrogen dioxide than are the simple 1,4-bis(alkylamino) anthraquinones. For example, the substitution of an arylamino group for an alkylamino group greatly enhances the resistance to gas fading, as does the replacement of a free amino by a hydroxyl group. These various structural changes and their effect on the colorfastness are tabulated.

It has been shown recently that, in addition to nitrogen dioxide, there is frequently sufficient ozone present in the atmosphere to react with vulnerable amino anthraquinone dyes and to cause a bleaching out of the blue color. It has been found that those dye structures which are more resistant towards nitrogen dioxide are also more resistant to ozone fading.

The amino anthraquinone blues have been found to have excellent affinity for the various polyester fibers. However, the simple 1,4-bis (alkylamino) derivatives show a very low level of lightfastness on these fibers. On acetate, by contrast, the lightfastness of these anthraquinone blues is generally satisfactory. Evidently the substrate plays a role in this degradation. However, here, too, the extent to which the lightfastness suffers depends on the presence or absence of specific structures. Those structures which are more resistant towards gas fading and ozone fading on acetate are also more resistant towards the effect of light on the polyester fibers.

Careful analysis of the colorfastness properties of a large number of amino anthraquinone derivatives has made it possible to establish definite relationships between fading and structure. The present work attempts to explain these relationships in terms of modern electronic concepts, with the added objective of facilitating the formulation of other resistant structures.

Eleven references to the literature are cited.

•

Studies on the Properties of of Bactericides and Fungicides

Moran, J J, *Can Textile J 77*, 51-3, May 13, 1960

The exigencies of World War II pointed up the absolute need for more efficient preservatives and disinfectants for combating microbiological attack on textiles.

Micro-organisms can be roughly divided into two classes: those dependent on living hosts, the *parasites*, and the larger group of organisms dependent on nonliving organic material, the *saprophytes*. The latter are essential to the balance of nature; they make re-available the organic matter in dead plants and animals, thus completing the nitrogen and carbon dioxide cycles.

To protect textile fibers from degradation by the saprophytes, the textile industry uses bactericides and fungicides (agents which kill bacteria) and bacteriostats and fungistats (agents which inhibit growth without necessarily killing the bacteria).

Biocidal products should be highly toxic to microbes but of low toxicity to man. Well-known and well-tested products can be divided into four classes: the phenolics; copper and zinc compounds; quaternary ammonium compounds; and mercurials and other organo-metallic compounds.

The Phenolics. Phenol was one of the first and most widely used biocides, and its efficacy can be increased by halogenation and other substitution reactions, but the strong odor and other objectional properties hinder the use of these products in textile applications. However, a class known as the bis-phenols are widely used and very effective. Two chlorinated derivatives, G-4 and G-11 (or hexachlorophene) are strong bactericides and fungicides. They are usually applied in emulsion form. They have the drawback of darkening on long exposure to light, and are liable to leaching loss on weathering.

Salicylanilide and lauryl pentachlorophenate are also roughly phenolic. The former will prevent attack on wool during storage. The latter has the good properties of the chlorophenols and is more leach-resistant and less toxic.

Copper and Zinc Treatments. The The two most widely used products here are copper naphthenate and copper 8-quinolinolate. The former is the more highly colored and also possesses a somewhat objectionable odor. Both are removed by weathering, but this can be retarded by wax application. Both are relatively inexpensive and find considerable application, being approved for most Government uses. Zinc naphthenate does not possess the objectionable

color of the copper compounds, but it is not as effective.

Quaternary Ammonium Compounds. These are ammonium compounds in which the H atoms have been replaced by alkyl, long-chain alkyl and heterocyclic groups in the cationic portion. They are odorless, colorless, of high stability and nontoxic and nonirritant in the proportions used. Their efficacy is high against microorganisms but, being cationic, they are inactivated by anionic agents, including soaps. The main interest to the textile trade is the possibility of their use as an after-rinse in laundering to prevent cross-infection.

Mercurials and Other Organometallic Derivatives. The mercurials as a group show extremely strong bacteriostatic and fungistatic properties. They have the drawback of being highly toxic. The organo-tin compounds have a much lower order of toxicity. One member of this group (bis tributyl tin oxide) has found wide use as a bactericide and fungicide.

The author discusses the methods of test used for determining the toxicity and efficacy of the biocides. He points out that their effective life is only 5 to 10 years (due to the development of new antibiotic-resistant bacteria), and that there is a continual need of newer and more efficient bactericides and fungicides.

●

Cake Dyeing with Reactive Dyes: The Correct Application of Hot Dyes

Flanagan, T, *Man-made Textiles* 37, 57-8, April, 1960

By contrast with the so-called "cold-dyeing" reactive dyes (see *Man-made Textiles* 37, 67-9, March, 1960), which contain two reactive halogen atoms, the "hot-dyeing" types contain only one labile halogen atom. They are much more stable compounds, and in order for reaction with the fiber to occur they must be applied at a higher temperature and in the presence of stronger alkalis. Their stability at high temperatures combined with their high rate of diffusion makes them eminently suitable for application to yarn packages of high density and low permeability, according to the author.

He describes experimental work carried out with the different members of the range of hot-dyeing dyes on continuous filament viscose rayon. The dyes used in these tests were all Cibacron colors, but many of them are identical with the Procion H brands. In neutral dyebaths this class of reactive dyes behaves in a very similar manner to the direct dyes. They have their optimum affinity at 70°C, but very little variation over a range of 60-80°C. The level of exhaustion obtained on the addition of electrolyte is generally higher than that obtained with the cold-dyeing reactive dyes, reaching a maximum exhaustion of between 60 and 80 percent.

Leveling tests carried out at 80°C on two percent shades of the hot-dyeing dyes in the presence of 50 g/l sodium sulfate (the optimum amount for most of the dyes) showed migration of 50-60 percent within 15 minutes. Optimum leveling was obtained within 30 minutes. This indicates that these dyes have a high rate of diffusion.

The fixation of the reactive dyes is a most important part of the process. The rate of fixation of the hot-dyeing reactive dyes is generally lower than that of the cold-dyeing types although, when using caustic soda as the alkali, it is still in the region of 40-50 percent within two minutes, over a range of 70-90°C. However, it was noticed that on the addition of caustic soda about 10-15 percent of the dye held by the fiber was returned to the dyebath. This was considered an undesirable feature, since it would cancel some of the advantage gained from the improved exhaustion with salt.

It was found that by the use of sodium carbonate as the alkali, at a concentration of 10 g/l, the fixation under such conditions at 65°C proceeds much more slowly and regularly, and there is the added advantage in that the return of dye to the dyebath on the addition of the alkali is eliminated. The color yield is also slightly better when using sodium carbonate.

The author stresses the importance of removng the unreacted dye from the fibers by soaping near the boil. Aftertreatment of reactive dyes with cationic products to improve water fastness is discouraged, since it lowers the lightfastness of some shades.

●

Dyeing of Blends Containing New Chemical Fibers

Leddy, J A, *Can Textile J* 77, 45-52, April 15, 1960

The author discusses 1) blends where processing methods are standardized, and 2) blends where new approaches have recently evolved. He points out that the vast majority of styles being run today contain at least one of the new fibers, and predicts that the future of the dyestuff manufacturers lies largely in satisfying the demands of the dyer for dyes applicable to these new fibers and dyeing methods to simplify the complications which have arisen with the new fiber blends.

Dacron/rayon is a popular blend for dress goods and men's wash-and-wear fabrics. The Dacron is dyed with disperse dyes and the rayon with direct dyes.

Dacron/cotton blends also go into wash-and-wear goods as well as into men's summer suitings and shirtings. Selected disperse dyes are used for the Dacron and vat dyes for the cotton.

Dacron/worsted blends are used on a large scale for tropical suitings. Union dyeing has several disadvantages, including difficulty in shade matching. For full shades the Dacron is best dyed with selected disperse dyes and the wool (in a fresh bath) with appropriate chrome, neutral-dyeing acid or 1:2 premetallized dyes.

Arnel-cotton blends enter into ladies' dress goods and men's sport shirts. The Arnel is dyed with selected disperse dyes and the cotton with selected direct dyes.

Acrilan/rayon has found wide use in women's wear, and more recently in the uniform field. Where only moderate fastness is required, selected disperse and direct dyes are used in a single bath. For superior fastness the Acrilan is dyed with selected cationic dyes and the rayon in a fresh bath with direct dyes. Irgalan dyes also have excellent all-round fastness on Acrilan, the author states.

No matter what fiber is being processed, or what dyestuff is employed, problems of levelness and penetration can occur. Two general approaches are normally encountered in the retarding and leveling of dyes. These techniques involve consideration of the anionic, nonionic and cationic natures of the dyestuffs and auxiliaries.

In the dyeing of Orlon 42 with cationic dyes, for example, a cationic leveling agent is used, which competes with the dye for available dye sites in the fiber.

A different principle is used in Geigy's "I-T method" of dyeing Acrylic fibers. Here an auxiliary product of the opposite type to the dye is used, with the object of forming complexes with the dye and thereby reducing its rate of dyeing. Thus, cationic dyes react with the anionic Irgasol DA. Full details are given of the application of the "I-T method", which is applicable to Acrilan 16, Orlon 42 and Orlon 21, and to blends of these fibers with Dacron 54, celllosics, and nylon.

World Man-made Fiber Survey

Anon, *Textile Organon 31*, 89-112, June, 1960

This survey covers the production, producing capacity, and foreign trade of all rayon, acetate, and noncellulosic and textile glass fibers.

Included are a table showing world production of the principal textile fibers from 1911 to 1959; a table of selected data from the U S Textile industry (rayon and acetate producers' data, textile fiber consumption, and textile fiber and yarn prices) from 1957 through May, 1960; figures showing the imports of selected man-made fibers from 16 foreign countries during Jan-April, 1960; a table giving the 1959 production, exports, imports and net available supply of all man-made fibers in all countries, including the U S; and tables showing the world's total man-made fiber production and producing capacity by country, covering the years 1950-59.

The names of the world's man-made fiber producers in 41 countries, including the U S, and the location of their plants, are listed.

World production of man-made fibers in 1959 totaled 7,010,000,000 lbs, 16 percent above 1958, and set a new record. While production of the cellulosic synthetic fibers increased about 11 percent, compared with 1958, the noncellulosics showed a gain of nearly 38 percent, and the production of glass fibers increased by 43 percent.

The author states that there will be 506 man-made fiber product plants in existence throughout the world on or before Dec, 1961, including 190 making rayon, 43 acetate, 241 noncellulosics, and 32 glass fibers.

•

For Level Wool Dyeing, Follow These Pre-dyeing Steps

Schmitt, C H A, *Modern Textiles 41*, #6, 31-2; #7, 32, 34, 66, June and July, 1960

The author discusses the problems of level dyeing on woolen goods as they are affected by the operations prior to dyeing (fulling, scouring, carbonizing, neutralizing, crabbing, steaming, and shrinkproofing).

The warp size should be capable of easy and complete removal during fulling and scouring, and not redeposited on the goods in uneven fashion.

Crabbing is generally done before fulling and scouring. However, if the goods contain tinted yarns, crabbing would set the tint, and therefore it should be done after scouring.

Carbonizing, in the writer's opinion, is the main source of most troubles with uneven dyeing. It should be done prior to fulling. The goods must be neutralized as soon as possible after baking.

In fulling, it is important that the shrinkage and felting be even from side to side and from end to end, to avoid wrinkles and dye streaks.

The final scouring must be done with care, to remove all residues of soap and alkali. Special synthetic detergents, with or without metaphosphate, are recommended. Running the cloth in rope form in scouring and washing is another cause of unevenness in dyeing.

The dye should be dissolved with care, with proper regard for its solubility, which may vary from 5 to 100 gpl. The main thing is to use enough water. Few dyes require actual boiling to dissolve them, and 180°F is recommended as the limit. The dye solution should be strained through cloth to remove undissolved particles.

Soft water should be used in dyeing; if it is unusually hard, 0.05% of a sequestering agent should be added to the water in the kettle before the dye is added.

Iron in the water will produce dull shades with acid dyes. Also, nearly all chrome dyes are affected in shade by iron, particularly when dyeing top-chrome. Special sequestering agents will help to reduce this trouble.

The author offer suggestions for the selection of proper dyes for ladies' wear, particularly if the goods come to the dyehouse not neutralized after carbonizing. He points out that chlorination after dyeing (for shrinkproofing) reduces the fastness to washing, light, and perspiration of many dyes, and a careful selection s necessary.

In drying, uneven moisture content in the dyed goods may cause shadiness. Also, if excessive heat (eg, over 220°F) is used, many dyes show a shade change, and the wool itself may acquire a yellow tint.

•

Science of Clothing Hygiene: Past and Present

Renbourn, E T, *Dyer 123*, 954-5, June 17, 1960

The thermal transmission properties of textile fibers, whether natural or man-made, are not appreciably different, and the warmth of a cloth is due in great part to the confinement of air between the fibers.

Fabrics made of smooth fibers, or closely-packed yarns, offer good surface contact and are, therefore, better thermal conductors than materials with a hairy surface or an open texture.

Water vapor is continuously being liberated by the body, and is transmitted through the clothing by diffusion, the rate depending on the relative volume of air in the fibers, the fabric thickness, and the physical nature of the fiber. Clothing ventilation is, however, a much more important method of removing the body's water vapor than the passive process of diffusion, and in hot weather the dominant requirement is removal of sweat. Water absorbed into hydrophilic fiber is taken up not only physically but also chemically onto the polar groups of protein and cellulosic substances.

The ability of a material to take up water into its interstices depends in part on the process of "wicking". Synthetic-fiber materials, particularly if texturized or bulked, take up an appreciable quantity of water into the interstices and transfer it rapidly to the other face of the fabric by their good wicking properties. Trials will, however, be required before they can be considered suitable as drip-dry underclothes or shirts in hot weather.

The author also discusses the effect on thermal insulation of impermeable layers of fabric next to the skin, and the effect of the surface color in the reflection of long infrared radiation.

Metallic films are good reflectors of short infrared radiation, and aluminum foil acts as an efficient reflector of both infrared and radar microwaves. Aluminized fabrics are, however, not particularly good reflectors of body heat and, up to the present, have not been of great success in the lining of raincoats or lightweight cold-weather clothing.

The author describes the work being done at Farnborough, Eng, in the evaluation of military clothing and equipment.

Although in the past the overuse of flannel as a universal panacea for protection from cold led to undesirable effects on the body, the natural fibers have, nevertheless, remarkable properties which are being slowly imitated and perhaps improved.

The author predicts that the future of clothing fabrics lies in the blending of natural fibers with synthetics.

•

Printing with the Fiber Reactives

Anon, *Textile Inds 124*, #1, 74-80; #2, 132-5, Jan and Feb, 1960

The fiber-reactive dyes are divided into three commercial groups marketed under the trademarks "Procion", "Cibacron", and "Remazol". The cold-dyeing Procions are cyanuric-dichloride reactives; the Pro-

cion H and Cibacron types are cyanuric-monochloride reactives; and the Remazols are vinyl-sulfon reactives.

All of these commercial brands exhibit similar behavior in their application to cotton fabrics on conventional printing equipment. A general printing formulation suitable for mixtures of the various reactive dyes contains, in addition, urea, sodium bicarbonate, sodium m-nitro benzene sulfonate (eg, Sitol), and thickener. Urea improves the dye solubility and promotes fixation; sodium bicarbonate, by breaking down into soda ash at the high temperature of aging, serves as a catalyst for the reaction; Sitol, a mild oxidant, prevents dye reduction during aging.

The selection of a suitable thickener requires extreme care, according to the author. Oil-in-water emulsions and alginate gums are both suitable for fiber-reactive printing, but starch and other thickeners which possess hydroxyl groups cannot be used, since they reduce the color yield by reacting with the dye. The relative merits of the emulsion and alginate gum thickeners are discussed at some length.

The fiber reactives have several advantages over other types of dyes. The colors afford easy inspection during printing, and require far less control of temperature, time and humidity in aging than is required with vats. The time of aging can vary from 3 to 10 minutes. Compared with pigments, the colors are brighter and the prints have the advantage of better crockfastness and a softer hand.

Among the disadvantages of these new dyes are their relatively high cost, the poor resistance to chlorine of some brands, and the high percentage of unfixed color which must be removed after printing. Also, the lightfastness of the various brands is not uniformly good.

Color fixation after printing can also be carried out in conventional curing equipment. This is an advantage if pigments are also present in the pattern.

The problem of unfixed color removal centers around two factors. The amount of unfixed dye is large, representing a color loss estimated at 20-40 percent, depending on the dye used and the depth of shade. Also, although the unfixed color is readily soluble, its removal requires a long soaping cycle with mechanical action of the fabric at high temperatures.

According to the author, fiber-reactive dyes are being used today primarily to create brilliant color effects on dress goods and children's apparel, but have only been used to a small extent on men's wear.

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New Finishes for Easy-care Wool Fabrics

Lundgren, H P, Papers AATT, *Modern Textiles 41*, 53-5, June, 1960

The Western Utilization Research and Development Division is one of four similar regional divisions of the Agricultural Research Service of the U S Department of Agriculture. At its laboratory in Albany, Calif, farm products under study include, in addition to wool, certain cereals and forages, sugar beets, oil seeds, poultry, eggs, fruits and vegetables.

The research work on wool, now under way at Albany, has two principal objectives: to develop better understanding of the basis for differences in wool as raw materials for modification and manufacture, and to discover modifications of wool which impart permanent, desired and practical properties, especially those properties that contribute to ease-of-care performance.

The author describes the laboratory work now in progress on the epoxy aminopolyamide finish for wool, for the control of felting shrinkage. The two kinds of epoxy resin prepolymers being examined are those made by reaction of epichlorhydrin with 1) glycerol and 2) bisphenol. Both kinds contain the chemically active "epoxy" rings, formed by two carbon atoms and one oxygen atom. These rings are readily opened by amines. Such opening starts the polymerization that results in the formation of the insoluble resin.

Simple amines are commonly recommended as curing agents, but these agents are volatile and toxic; therefore the nontoxic, nonvolatile aminopolyamides have a distinct advantage. Moreover, when incorporated into the epoxy resin as a copolymer, they contribute to the flexibility of the cured resin.

The epoxy resins are relatively cheap, they are readily emulsifiable in water, and the emulsions are easily handled by the standard padding and curing procedures.

The amino-polyamides, on the other hand, are excellent curing agents for epoxies. They are made from dimerized fatty acids which are reacted with polyamines (eg, diethylenetriamine). On curing, they form copolymers that are physically tough and flexible and chemically inert.

When applied as finishes to wool fabrics, the cured copolymers of amino-polyamides and epoxies become strongly anchored as very thin films on the fiber surface. This film acts to prevent felting shrinkage, with alteration in the hand of the fabric.

Both epoxy resins impart slight yellowing to the treated fabrics, and both can affect the shades of certain acid dyes, but not premetallized dyes.

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Dyeing of Dacron Polyester Tow

Iannarone Jr, J J, *Dyes Chem Tech Bull (du Pont) 15*, 206-12, Dec, 1959

In the past year there has been a considerable increase in the dyeing of Dacron in tow form. Dyed Dacron tow is processed into top on the Pacific Converter and then blended with wool top to make Dacron/wool yarns.

The author states that there are two important advantages claimed for processing via the tow route: processing costs are generally lower when going for tow to top than from raw stock to top, and the quality of top produced from dyed tow is usually better than that produced from dyed raw stock or top.

Dacron tow may be dyed by conventional processes, by the "Pad-fix" method, or in the Burlington machine.

The Pad-fix method is similar to conventional dyeing with the exception that the wet-out bath is replaced by a pad bath containing a predetermined amount of dye. The tow is padded through the dye dispersion and is then placed in the raw-stock basket for subsequent dyeing by conventional methods. An important advantage of this procedure is that, in heavy shades, filtration of the dye is greatly minimized and level dyeings with generally good crocking fastness are obtainable.

The author describes the production of a developed black shade by the Pad-fix method, which he states is one of the most important shades on tow. Latyl Diazo Black B and Naphthanil ASD, with suitable assistants, are padded on the tow, which is dyed at 250°F, diazotized, and scoured. Full details of the process are given. Suitable dyes are also recommended for a range of men's wear shades.

Brief reference is made to dyeing in the Burlington machine. The Thermosol process may also be used, the author states.

Satisfactorily processing of Dacron tow through the Pacific Converter requires that a suitable finish be applied after the tow is dyed. A method for applying the finish by spraying is described.

News of the Trade

Program for Fiber Society's Fall Meeting

The technical program for the fall meeting of the Fiber Society, to be presented at the Washington Hotel, Washington, DC, on October 27 and 28 has been announced by Society President Ernest Kaswell, Fabric Research Laboratories, Inc, Dedham, Mass.

Chairman of the opening session will be William Barnard, Chicopee Mfg Corp, Milltown, NJ. He will introduce Rollin S Orr, Southern Regional Research Laboratory, USDA, New Orleans, La, who will discuss the "Effects of Inherent Fiber Properties and Methods of Resin Treatments on the Physical Properties of Cotton Fibers and Yarns." Also during the first session A M Schwartz, Harris Research Laboratories, Washington, DC, will do a presentation on "The Penetration of Fabrics by Individual Droplets of Organic Liquids."

The second session will be chaired by Norbert Enrick, Institute of Textile Technology, Charlottesville, Va, and will include "Operations Research on the Service Life of Textile Products," by Stanley Backer, Massachusetts Institute of Technology, Cambridge, Mass.

The morning session of Friday, October 28th, will have as its chairman Richard Steele, Rohm & Haas Co, Philadelphia, Pa, and will include the following discussions: "Principles of Wet Processing" by Bertil Olofsson, Swedish Institute for Textile Research, Gothenburg, Sweden; and the "Dyeing Rate Studies of Acrylic Fibers" by B L Holmes, American Cyanamid Co, Pensacola, Fla.

The afternoon session will have as its chairman Lionel Cox, Johnson & Johnson, Ltd, Montreal, Canada. Technical presentations will be: "Effect of Elongation and Temperature on the Recovery Behavior of an Experimental Modacrylic Fiber" by George M Bryant, Union Carbide Chemicals Co, South Charleston, W Va, and "Stiffness and Resilience of Viscose Rayon as a Function of Swelling and Temperature" by R A Gill, Rohm & Haas Co, Philadelphia.

On October 26 at the Society's Governing Council meeting, officers for the coming year will be elected. Further information on the meeting and program may be obtained by writing to the Fiber Society, PO Box 405, Athens, Ga.

John L Fancourt, left, president of W F Fancourt Co, reviews blueprints of plant to be built in Greensboro, NC, with Donald Loeber, company office manager.

Fancourt Purchases Site for Greensboro Plant

W F Fancourt Co, Philadelphia, Pa, has acquired a site in the South for the expansion of its entire operation.

The company purchased a tract of ten acres in Greensboro, NC, for $30,000.

Plans for a contemporary design, three-story building of 22,000 square feet have been prepared by Charles A Crass of Philadelphia. Construction will begin shortly with completion anticipated by late summer, 1961.

The new plant will supplement all Fancourt laboratory and manufacturing operations in Philadelphia and will incorporate company offices now maintained in Burlington, NC.

It reportedly will house a modern research and development laboratory equipped with the latest instruments for the developing and testing of new products and for solving customer problems.

Also to be housed in the new facility will be an expansive product manufacturing department with equipment to double the company's current production output and to speed service to customers in the Greensboro and surrounding textile areas, it is reported.

The building will be constructed of brick with an aluminum curtain wall. Windows will be made of solar gray glass.

International Latex Acquires Southern Latex

Negotiations for the sale of Southern Latex Corp and it subsidiaries to International Latex Corp, Dover, Del, have been completed subject to approval of the board of directors of both companies.

Southern Latex manufactures and sells latex compounds and chemicals to the textile industry throughout the South. International Latex, through its Chemical Division, manufactures and sells, on a national basis, synthetic latex and resins to the textile, paper, paint and adhesive trades.

As part of the International Latex Corp family, Southern Latex will operate as an autonomous company under the direction of its president, D C Cochran, with no change in its management and policies.

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25 Textile Firms Reserve Space for '61 KAE

Twenty-five textile firms are among those which have reserved space for product display at the 45th Knitting Arts Exhibition, which will be held for five days in Atlantic City, NJ, starting April 24, 1961.

Representatives of 4,500 companies in the US and foreign knitting trades are expected to attend. The exhibition is sponsored by the National Association of Hosiery Manufacturers, the Underwear Institute, and the National Knitted Outerwear Association. Displays will fill more than 600 booths.

Companies reserving space include: American and Efird Mills, Inc; Brant Yarns, Inc; Cannon Mills, Inc; Caron Spinning Co; Cotton Yarns, Inc; Courtaulds, Inc; Cross Cotton Mills Co; Dixie Mercerizing Co, Inc; Eastern Yarn Mills, Inc; Ewing-Thomas Corp; W F Fancourt Co; Highland Cotton Mills, Inc; Indian Orchard Finishing Co; Johnston Mills Co; Jordan Spinning Co; Latta Currier Co, Inc; Narrow Fabric Co; Pharr Worsted Mills; Piedmont Processing Co; Sanitized Sales Co of America, Inc; Standard-Coosa-Thatcher Co; Textiles, Inc; Textured Yarn Co, Inc; Threads, Inc, and Waterman, Merrille, Largen & Co, Inc.

Reservations are currently being accepted for display booths at the Exhibition by Robert T Kenworthy, Inc, exposition management, 10 East 40th St, New York, NY.

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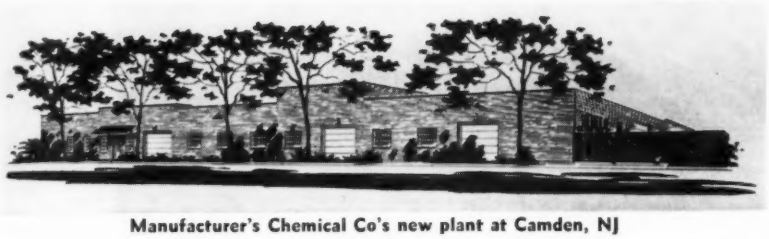

Manufacturer's Chemical Co's new plant at Camden, NJ

MCC Expands

On August 1, Manufacturer's Chemical Co, Inc, moved to a new, modern, expanded plant and research facilities at 1450 Ferry Ave, Camden 4, NJ. The new building also includes administrative offices.

Because of the increased capacity and the more complete line made possible by the new facilities, the company is adding more jobbers to service the textile industry.

Manufacturer's Chemical Co, Inc produces a diversified line, including softeners, flame retardants, water repellents, spinning oils, hosiery finishes, detergents, binders for nonwoven fabrics, latex backings, etc.

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Metal-8-Quinolinolates Compared in Search for Light-Colored Fungicide for Outdoor Fabrics

A comparative study of ten laboratory-prepared metal-8-quinolinolate compounds to determine their effectiveness as protective treatments for fabrics exposed to weather has been conducted at the USDA's Southern Utilization Research and Development Division in New Orleans, La.

The studies were a part of the cooperative program of research by the Canvas Products Association International and the Southern Division.

Copper-8-quinolinolate as a fungicide for canvas awnings and other fabrics exposed to outdoor weathering is said to meet most of the requirements for such treatments, except that it imparts a yellowish-green or light olive drab color to the fabric, which is objectionable in some light striped awnings and other decorative outdoor fabrics.

Other metals selected for this study were aluminum, bismuth, cadmium, chromium, cobalt, copper, iron, manganese, nickel and zinc. The 8-quinolinolate salts of these metals were prepared, classified as to color, exposed, and evaluated for this fungicidal effectiveness as well as for their effect on the rate of fabric degradation.

Colors of the treated canvas ranged from dark gray imparted by the iron salt to cream, produced by the manganese salt, and the lightest, a very light yellow produced by the nickel salt. Commercial and laboratory-prepared copper 8, and zinc and aluminum 8 showed no visible mildew growth at the end of the weathering period. The fabric treated with commercial copper 8 showed the highest level of strength retention (69-70%).

Details of the test are given in a paper, "A Comparative Weathering Study of Different Metal 8-Quinolinolates," by Edward L Patton, Canvas Products Association International Research Fellow, and W Norbert Berard and Ralph J Bryson, of the Southern Division. Single copies of the article may be obtained without cost from the Southern Utilization Research and Development Division, PO Box 19687, New Orleans, 19, La, by requesting Reprint No. 1990.

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Textile Chemistry Film to be Revised

Institutions offering degrees in textile chemistry have been advised the film, "Field with a Future", is to be revised.

Over 50,000 certified viewers in public, private and parochial high schools reportedly have seen this recruitment film. The majority of showings were directed to students in junior and senior classes, with teachers receiving supplemental material to stimulate student inquiries. The eight educational institutions were listed for student preference, and names of interested young people were forwarded for follow-up.

Television stations have cooperated by transmitting the recruitment message. As a public service to chemical education, WSOC in Charlotte, NC, WSFA in Montgomery, Ala, WTVR in Richmond, Va, WTVY in Dothan, Ala, WNCT in Greenville, SC, WVEC in Hampton, Va, and WCYB in Bristol, Va, have donated facilities and effective time segments. Vocational counselors agree wide dissemination of information affects the parent's influence on career selection. The TV stations, listed in order of date of transmission, provided an estimated audience of over 250,000.

The film has assumed an important role at many open houses throughout the textile wet processing industry. Civic organizations and community groups have been loaned release prints for parent guidance programs. Individuals in various textile communities have added personal stature to the film program.

The film's opening is planned to secure more immediate student interest, according to W C Caldwell, president of Wica Chemicals, Inc, which has underwritten production and distribution. Up-to-date fashions are to be incorporated, and a humorous animated cartoon sequence will alert students to advances in apparel and flat goods through chemistry. An improved closing statement will place forceful emphasis on the importance of the student's decision for his future. Prints currently in circulation have been recalled in order to facilitate an early re-make.

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Scher Bros Celebrating 25th Anniversary

Scher Brothers, Clifton, NJ, this year celebrates its 25th anniversary in the field of textile chemicals. Martin M Scher, and his brother, Robert A Scher, partners, started the business in 1935 with a long background of activity in the silk business in Paterson, NJ, where their father had established the Scher Silk Company at the time Paterson was the "Silk City of America."

Starting as manufacturers' agents right after the depression, they found it natural to move into the textile chemical business. At first their activities were confined to New England, Pennsylvania, New York and New Jersey. Later they went into the wholesaling of heavy chemicals, commercial soaps, and continued as manufacturers' agents. Slowly they went into manufacturing chemicals for dyeing, finishing and printing textiles, and moved to Clifton from Paterson. Today they are primarily manufacturers.

The war gave great impetus to the Scher Brothers business, as they were able to contribute to the speeding up of the processing time in factories making uniforms for the Army, Navy and Marine Corps. For example, they developed some materials which were used for the dyeing of linings for uniforms which reportedly cut the processing time in the dyeing plant from eight to three hours, thus greatly increasing the production rate. They are said to

have met all U S government colorfastness requirements. Known as Duraset and Dy-Set, these materials are still big items for direct colors on rayon, cotton, silk, etc.

As the textile industry moved South, Scher Brothers' salesmen followed and the business was greatly extended. Their first plant in Clifton was torn down to make room for the Garden State Parkway; their second was outgrown, and now they are in their third, in the Allwood section of Clifton. It is a modern streamlined edifice, strategically located right off NJ Route 3, which makes it close to metropolitan New York and all northern New Jersey points.

Scher Brothers recently announced the introduction of its new series of Scherbro carriers and Schercobinder binders. (See "New Products" section in this issue).

Other products of the Scher line include the Defoma antifoams for textile dyeing and finishing, and also for use in paper processing; various sequestering and chelating agents sold under the Sequex tradename; Silipel silicone water repellents, and Silifin silicone finishing agents for textiles; Silimul silicone emulsions, and others. Scher Brothers also manufactures a complete line of resin finishes, weighters, fillers, aluminum and zirconium water repellents, detergents, wetting and penetrating agents, anionic, cationic and nonionic softeners.

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Clark-Schwebel Breaks Ground for New Fiber Glass Processing Plant

Clark-Schwebel Fiber Glass Corp has broken ground for a $3,000,000 fiber glass weaving and finishing plant in Anderson, SC.

An air-conditioned, one-story building covering 160,000 square feet is planned initially. This facility, located on a 20-acre tract, will have approximately 400 looms. It is designed to allow for expansion to twice its original size.

Jack P Schwebel, executive vice president of the fiber glass weaving company, said plant will be completed by January 1.

When completed, the initial facility is expected to employ approximately 300 people. It will include a modern research and development laboratory and a plastics engineering laboratory, as well as a custom-built finishing plant.

The company, an independent affiliate of M Lowenstein & Sons, Inc, will weave and finish both industrial and decorative fiber glass fabrics.

New Morningstar-Paisley, Inc industrial adhesives plant in Atlanta, Ga.

Morningstar-Paisley Begins Adhesive Production in Atlanta

Production of a complete line of industrial adhesives has begun at the new Moringstar-Paisley, Inc, plant in Atlanta, Ga. The new plant will also serve as a warehousing and service facility for other Morningstar-Paisley products, such as textile, paper and food starches, water-soluble gums, polyvinyl acetate resins, and plastisols. The Atlanta operation is the 15th plant in the company's string of coast-to-coast processing facilities.

The new adhesives plant is located on Lake Mirror Drive in the Expressway Industrial Park. The building is fire-proof construction, brick, and steel, with air conditioning in laboratories and office areas. The entrance will be landscaped. The two-acre site with railroad and truck sidings provides space to triple the present plant.

Kritzer

Lenz

Plant personnel will include Lee Kritzer, regional manager, and Milton F Lenz, production manager, assisted by technical specialists.

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ECPI Chemicals Div Establishes New Buffalo Office

The Chemicals Division of Eastman Chemical Products, Inc, subsidiary of Eastman Kodak Company, has established a new office in Buffalo, NY, located in the Snyder Square Building, 4498 Main Street.

Te new office will be under the supervision of George O Trabue, who was formerly in the company's Cleveland office. Mr Trabue will represent Eastman in the sale of its industrial and specialty chemicals in Western New York, Western Pennsylvania, and Southern Ontario areas.

New Pilot Plant Installed at Wica

The installation of an additional pilot plant is said to shorten the time between Wica Chemicals, Inc's field-tested developments and commercial production at Charlotte, NC.

Innovations in the basic pilot design incorporate methods of control termed "unique" to assure flexibility in the engineering approach. Mechanical modifications and experimental polymerization units can be moved quickly and efficiently into the system, it is stated.

W C Caldwell, Wica president, states that processors can expect commercial quantities of Wica products heretofore unavailable.

Derived flow charts will determine the most practical construction of large-scale equipment in Wica's continuing expansion.

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Montecatini, ICI Sign Agreement for Production of Meraklon in UK

A patent agreement for the production of Merkalon polypropylene fiber under exclusive license for the United Kingdom was signed in Zurich on August 30, between Montecatini and Imperial Chemical Industries, Ltd. This polypropylene fiber is already produced in Italy by Polymer SA at Terni.

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3M, Warner-Lambert Merger Explored

Minnesota Mining & Manufacturing Co, St Paul, Minn, and Warner-Lambert Pharmaceutical Co, Morris Plains, NJ, said last month that they are engaged in negotiations for the purpose of combining the two companies.

William L McKnight, 3M board chairman, and Elmer H Bobst, Warner-Lambert chairman, emphasized that further discussion of details and subsequent approval by the respective boards of directors and stockholders of the two firms will be necessary before any combination can be achieved.

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U S Production and Sales of Dyes in 1959 Substantially Larger Than in 1958

The U S Tariff Commission has released its preliminary report on U S production and sales of dyes in 1959. The report, twelfth in a series on production and sales of synthetic organic chemicals in 1959, gives preliminary statistics for 320 individual dyes, and totals by chemical class and by class of application, using the new *Colour Index* classification and terminology. In the Commission's preliminary report for 1959, statistics for fiber-reactive dyes, color groups within classes, and a breakdown of azo dyes by groups are shown for the first time.

According to the report, U S production of dyes in 1959 amounted to 168 million pounds—20 percent more than the 140 million pounds produced in 1958 and 17 percent more than the 143 million pounds produced in 1957. Sales of dyes in 1959 amounted to 157 million pounds, valued at $203 million, compared with 139 million pounds, valued at $177 million, in 1958. In terms of quantity, sales of dyes in 1959 were 13 percent larger than in 1958 and, in terms of value, 15 percent larger.

For many important low- and medium-priced dyes for which statistics are given in the report, production was larger in 1959 than in 1958. The output of CI Vat Blue 1 (synthetic indigo) was 8.9 million pounds in 1959, or 14 percent more than the 7.8 million pounds reported in 1958; that of CI Direct Black 38 was 5.9 million pounds, or 26 percent more than the 4.7 million pounds reported in 1958. Production of CI Mordant Black 11 in 1959 (3.8 million pounds) was double that in 1958 (1.9 million pounds). Other important dyes whose output was substantially higher in 1959 than in 1958 were: CI Vat Green 3 (69 percent larger); CI Vat Yellow 2 and CI Vat Black 25 (each 50 percent); CI Direct Yellow 6 (38 percent); CI Mordant Black 17 (30 percent); and CI Acid Black 1 (29 percent).

On the other hand, the output of a few important dyes was smaller in 1959 than in 1958. Production of CI Vat Green 9 in 1959 was 0.9 million pounds—36 percent less than the 1.4 million pounds reported for 1958; that of CI Direct Black 80 was 23 percent smaller; and that of CI Vat Blue 6 was nine percent smaller; and that of CI Vat Green 1 was nine percent smaller.

With respect to dyes grouped by class of application, four classes of dyes accounted for more than 70 percent of the total output of dyes in 1959: Vat dyes accounted for 28 percent of the total; sulfur dyes, for 19 percent; direct dyes, for 15 percent; and acid dyes, for nine percent. In 1959 the output of each of these four major classes was larger than that in 1958. Production of acid dyes was 36.5 percent larger; sulfur dyes, 24.0 percent; direct dyes, 19.5 percent; and vat dyes, 13.9 percent. The total output of azoic dyes and components—the fifth-ranking class of dyes—was 9.1 million pounds in 1959, or 3.4 percent more than the 8.8 million pounds reported for 1958. The output of two of the four groups of azoic dyes and components was larger in 1959 than in 1958. Production of fast color bases was 42 percent greater and that of azoic compositions was 26 percent greater. On the other hand, the output of fast color salts was 13 percent smaller in 1959 than in 1958, and that of the azoic coupling components, 12 percent smaller.

The output of all the remaining classes of dyes also was greater in 1959 than in 1958; that of mordant dyes was 66 percent larger; solvent dyes, 22 percent; disperse dyes, 22 percent; basic dyes, 21 percent; fluorescent brightening agents, 20 percent; and food, drug, and cosmetic dyes, 11 percent. In 1959 the fluorescent dyes were the fourth most important group of dyes in terms of value of sales; sales in that year amounted to $16.9 million.

In 1959 five chemical classes of dyes accounted for more than 80 percent of all the dyes produced: Azo dyes accounted or 30 percent of the total; anthraquinone dyes, for 20 percent; sulfur dyes (not including vat sulfur dyes), for 19 percent; indigoid dyes, for seven percent; and stilbene dyes, for six percent. The output of all these five classes was larger in 1959 than in 1958; that of stilbene dyes was 32 percent larger; that of azo dyes, 24 percent; that of sulfur dyes, 24 percent; that of indigoid dyes, 17 percent; and that of anthraquinone dyes, 14 percent. Production of all but two of the remaining chemical classes—the phthalocyanine dyes and the ketone imine dyes—was greater in 1959 than in 1958; the output of the phthalocyanine dyes was 35 percent smaller and that of the ketone imine dyes, five percent smaller. In terms of value of sales, the most important classes of dyes were the azo dyes ($75.2 million), the anthraquinone dyes ($51.5 million), the stilbene dyes ($19.3 million), and the azoic dyes ($13.3 million).

The statistics on production and sales of dyes in the Commission's preliminary report on dyes are more than 95 percent complete. Complete statistics will be given in the Commission's final report on production and sales of synthetic organic chemicals in 1959, which will be issued later this year.

Copies of the preliminary report on production and sales of dyes in 1959 may be obtained by writing to the US Tariff Commission, Washington 25, DC.

•

Dow Badische to Produce Butanols

Plans for construction of plant facilities to produce butanols, a family of chemicals of interest to the textile industry, have been announced by the Dow Badische Chemical Company.

Work on the new facilities at Freeport, Texas, began in October, 1959. Completion of the plant and first shipments are scheduled early in 1961.

Products of the plant, n-butanol and iso-butanol, will be sold through The Dow Chemical Company. (Dow Badische Chemical Company is owned jointly by Dow and BASF Overzee N V). Dow said stocks would be maintained at key terminals to facilitate mixed shipments with other Dow chemicals required by butanol users in the lacquer and resin solvent industry.

•

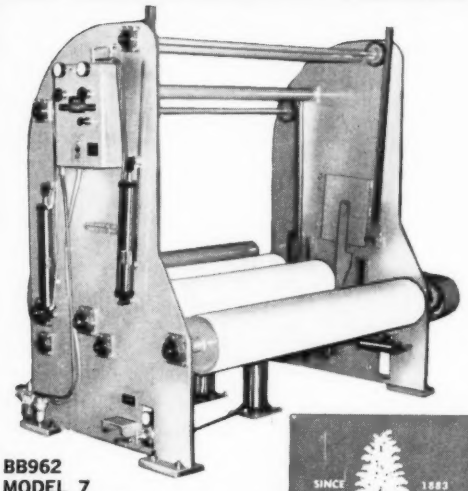
CCDA to Hold Joint Meeting with Canadian Chemical Institute

The Commercial Chemical Development Association and the Chemical Economics Division of the Chemical Institute of Canada will hold a joint meeting on October 18 at the Queen Elizabeth Hotel in Montreal.

The theme of the meeting, "The Chemical Industry—Canada and the U S A", will dwell on the internal and external problems of the chemical industries of both countries. Panel speakers from each country will present their views, and questions will be raised by panel members from the other country, in turn.

Program cochairmen are John Enns of the Chemical Institute of Canada and Joseph A McGroarty of the Commercial Chemical Development Association. Well-known speakers from both Canada and the United States will participate.

UP FRONT at the Parade of Progress . . .



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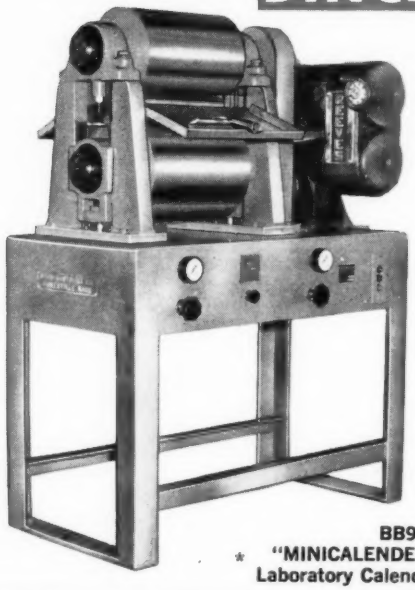

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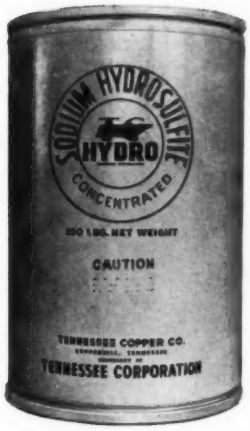

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TC TENNESSEE CORPORATION
612-629 Grant Building, Atlanta 3, Georgia

Ethylene oxide in process of being piped from GAF's new specially developed tank truck into storage facilities at Trylon Chemical Co, Lock Haven, Pa. This was the first delivery utilizing the new shipping method, initiated by Antara Chemicals, GAF, last month.

GAF Initiates Truck Shipment of Ethylene Oxide

The trend toward bulk delivery of chemicals by tank truck received a major boost last month with over-the-highway shipment of ethylene oxide, originating from Linden, NJ, plant of General Aniline & Film Corp. The development is the result of three years of safety research by GAF's Dyestuff and Chemical Division with state and federal regulatory groups.

The first customer truck shipment, was made August 3 to Trylon Chemical Co, Lock Haven, Pa. It is said to permit speedier, more economical shipment of ethylene oxide than was heretofore possible, and is expected to be a major convenience to many of GAF's customers who do not have railroad sidings.

An additional consideration to GAF is faster and more convenient intra-plant ethylene oxide delivery by truck for its own captive uses, particularly for manufacture of surface-active agents and intermediates for a variety of organic chemical products.

The development and design of the new tank truck began in 1957, the same year the firm completed its ethylene oxide production facilities at Linden.

One of the aspects of shipping chemicals by truck is the special care devoted to driver training and safety of handling. An intensive program of training for four drivers and a warehouse supervisor, and handling instructions had been developed by the company, even before intra-plant deliveries were started. The four drivers were instructed in all matters pertaining to transportation and handling of ethylene oxide, and safety rules and regulations. Dry runs were held, and road experience was gained, a check list and manual for each man to follow was developed for each trip to be made. This project has received the most minute care and stringent inspection, and after several months of in-plant trips, is now ready to roll.

The tank truck can carry approximately 30,000 lbs, which is equal to 85% of its total capacity. The basic tank is made of high-tensile steel and built to withstand pressure of 265 lbs per square inch. The outside diameter of the tank is 78", and it is 28 ft, 6" long. It is insulated with glass wool and has a stainless-steel outside skin. Its design includes valving and safety features similar to those used in ethylene oxide railroad tank car construction.

After the initial delivery to Trylon Chemical, a number of other trips have been made to customers throughout the Eastern Seaboard area.

•

Olin Mathieson to Build New Chlorine and Caustic Plant at Charleston, Tenn

Olin Mathieson Chemical Corporation will begin construction immediately on a $13,000,000 chlorine and caustic soda plant at Charleston, Tenn. Production is scheduled for the end of 1961.

The new facility, using the Mathieson electrolytic cell for the production of chlorine and caustic, reportedly will have a capacity of 180 tons a day, and be located on about 600 acres on the Hiwassee River, a navigable tributary of the Tennessee River. Power for operations will be supplied by TVA.

Olin Mathieson now produces chlorine and caustic soda at Niagara Falls, NY, McIntosh, Ala, and Saltville, Va.

The new facility will allow Olin Mathieson to add to its ability to supply Southern markets and will serve as a source of chlorine and caustic soda for its manufacturing operations at Doe Run (Brandenburg, Ky) and other points.

A Chemical Specialty Development of CIBA

RETARDER O CIBA

Outstanding leveling agent for cationic dyes in dyeing acrylic fibers

RETARDER O

offers superior retarding action in the critical temperature range between 195-212°F.

RETARDER O insures a high degree of exhaustion in the critical temperature range of between 195-212°F. This cationic, aqueous solution can be added straight to the dyebath. RETARDER O is highly efficient and economical to use. Let us send you the technical folder describing RETARDER O in detail. CIBA Company Inc., Chemical Specialties Division, Fair Lawn, N. J.

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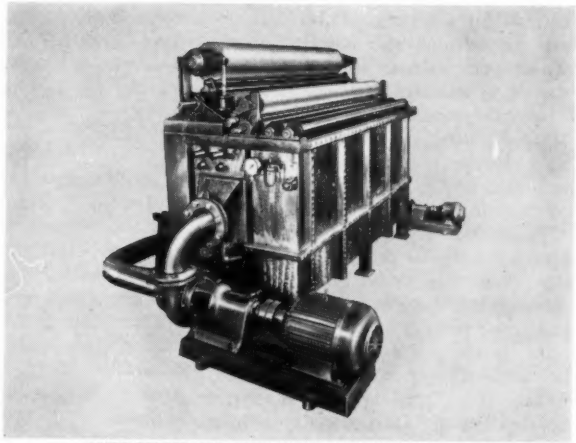
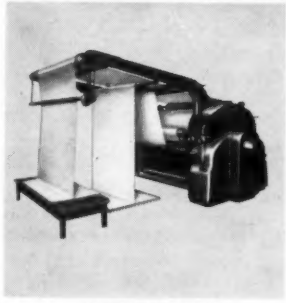
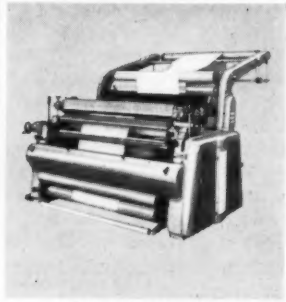


OMEZ FORCED JET OPEN WIDTH WASHING MACHINERY



NAPPING MACHINE



SHEARING MACHINE

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Cyanatex Dyeing Assistant

Brighter, heavier shades in a wider, more attractive range of useful colors may be expected for polyester, triacetate and acetate fibers when a new dyeing assistant developed by American Cyanamid Company is included in the dyebath, it is claimed.

Supplied as a readily dilutable emulsion, a new carrier, Cyanatex Dyeing Assistant EM, is said to accelerate the penetration of the dye into the fiber at below-the-boil temperatures. Shorter dyeing cycles, lower dyeing temperatures and better color values are the results claimed by Cyanamid.

Cyanatex EM reportedly does not reduce the lightfastness of dyeings even when not completely removed from the dyed materials, eliminating the need for a strong, alkaline afterscour to remove the carrier. Wetfastness and fastness to wet and dry pressing of dyeings are also reported to be exceptionally good.

It is claimed that, with Cyanatex EM, a dyer can produce a dyeing in one hour, which, without the carrier, may require 24 to 50 hours.

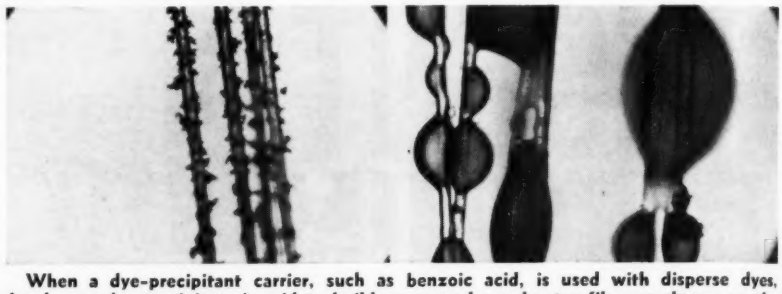
Cyanamid's new carrier may be added directly to the prepared dyebath. It is said to be effective over a wide pH range of 5.5 to 9.5 and will remain so throughout most dyeing cycles at temperatures up to 180°F. The latter property is attributed to the fact that Cyanotex EM does not vaporize rapidly from the dyebath at 180°F or below.

Compatibility tests with disperse dyes reportedly show that other additives are unnecessary in the dyebath to obtain dyeing conditions suitable for polyester and triacetate fibers. Although Cyanatex EM is said to be effective at all temperatures used in dyeing these fibers, optimum efficiency in dyeing reportedly is achieved when dyeing near the boil in equipment that maintains the fabric at a uniform temperature during the dyeing operation.

In dyeing acetate piece goods in open jigs, it is claimed that as little as 0.25% Cyanatex (on weight of dyebath) will minimize or eliminate uneven cooling and migration of surface-deposited dyes, which can cause shading of selvages and nonuniform distribution of color across the fabric.

Because it reduces staining of wool and cellulosic fiber by disperse dyes, Cyanatex EM is said to be particularly useful in dyeing mixtures of polyester or triacetate with wool or cellulosic fibers. By proper selection of dyes, a one-bath procedure may be used for some shades.

If a two-bath procedure is required, the polyester or triacetate fiber is dyed first with Cyanatex EM in the dyebath. Afterscouring is followed by a conventional dyeing cycle for the wool or cellulosic material.



When a dye-precipitant carrier, such as benzoic acid, is used with disperse dyes, the dye-carrier precipitate is said to build up around a polyester fiber as shown on the left. A dye-solvent carrier, such as Cyanatex Dyeing Assistant EM, forms colored globules with disperse dyes. These globules attach themselves to the polyester fiber as shown on the right.

•

Dextraset

Dextraset, a new resin for "wash-and-wear" cottons, rayons, and other fabrics, is said to have the advantages of existing resins while offering the added features of eliminating discoloration or "yellowing" of the fabric when ironed and odor buildup.

The new finish, a product of Dexter Chemical Corp, New York, NY, is said to be made from urea formaldehyde and methyl alcohol compounds by means of a new chemical process on which patents are being sought. The amine-free product is currently available at a price in the 13-17¢ per pound range to mills and finishers.

Sidney M Edelstein, Dexter president, states that the resin, which has been under evaluation at several leading mills during the past year, has shown performance equal to any on the market as regards resistance to wrinkling, loss of tensile strength, and shrinkage.

Dextraset reportedly can be used with equal efficiency on cottons, rayons, Dacron, or in blends of cotton and man-made fibers.

•

Bancroft Introduces Nonresinous Finish on Rayon

The successful application of a nonresinous finishing process to rayon cloth is claimed by Jospeh Bancroft & Sons Co, Wilmington, Del, originators of the Everglaze family of fabrics. They will be produced and marketed under the Everglaze BanCare trademark.

The new process is said to make possible the production of rayon fabrics and garments with a "wash-and-wear" rating between 4 and 5, reportedly making them commercially competitive with the fine cottons and synthetics. Rayon cloth subjected to the process is said to be unique in that the improved "wash-and-wear" properties are not due to a special finish but, rather to a complete and permanent transformation in the fabric itself.

As a result of this alleged permanent chemical change in the fibers, Everglaze BanCare rayons are said to have many distinctive properties that are "built into" the fabric, such as substantially improved wet and dry wrinkle recovery, durable dimensional stability, and a soft, pliable, non-irritating hand.

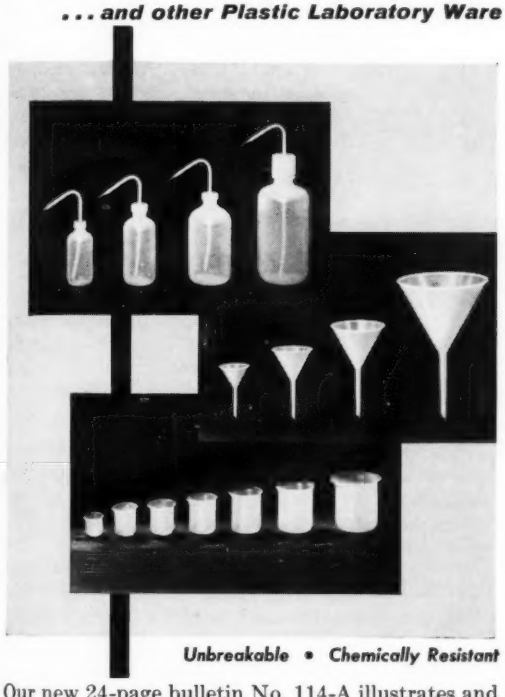
It is claimed that independent laboratory tests show that the "wash-and-wear" properties and dimensional stability are consistently maintained after as many as fifty commercial launderings. The American Institute of Laundering reportedly has awarded its seal of approval to rayons produced by this new nonresinous process.

Since the process is nonresinous, there are no problems with damage or discoloration from chlorine, and garments are said to have a durable resistance to perspiration, mildew and bacterial damage. Another feature, almost complete lack of linting, is important for uniforms worn in hospitals and laboratories where an acresistance to perspiration, mildew and safety hazards.

Production of Everglaze BanCare rayon fabrics is now underway at the Bancroft plant.

Thomas assortment of POLYETHYLENE POLYPROPYLENE TEFLON

. . . and other Plastic Laboratory Ware



Unbreakable • Chemically Resistant

Our new 24-page bulletin No. 114-A illustrates and describes 406 items of laboratory ware fabricated from plastic materials, some of the newer items being:

- **Aspirator Bottles, Polyethylene**
- **Centrifuge Tubes, Polypropylene and Teflon**
- **Cylinders, Graduated, Polypropylene**
- **Dishes, Teflon**
- **Filter Pump, Polyethylene**
- **Policemen, Polyethylene and Teflon**

Included in the bulletin is data as to the physical and chemical properties of the various plastics, with information as to the purposes for which each is most suitable.

Polyethylene is now available in a higher density type than heretofore. This new type is more rigid than the former lower density type and can be used up to 100°C. Polypropylene is harder, with greater strength than either type of polyethylene and can be used up to 130°C.

Teflon is the most resistant chemically of any material now used in laboratory ware and can be used at temperatures from −265° to +315°C.

Copy of Bulletin No. 114-A sent upon request.

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Assures level dyeing with thorough penetration of the seams. Adds softness.

For dark shades, use Leatex "Orcyl"

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New Atlas high-temperature Launder-Ometer

New High-Temperature Launder-Ometer

Atlas Electric Devices Co, 4114 N Ravenswood Ave, Chicago 13, Ill, has announced a new model Launder-Ometer which may be operated at temperatures up to 300°F.

For high-temperature dyeing, up to 20 new high-pressure stainless-steel containers, 3″ × 6″ high, may be used simultaneously. The containers are provided with fittings which permit injection of additives during test and release of any built-up pressure before opening.

A high-boiling-point fluid, such as ethylene glycol, is employed in the bath. It is rapidly brought up to 300°F by electric immersion heaters and is quickly cooled to handling temperature by a water-cooling coil.

This new Launder-Ometer can also be operated with conventional specimen containers at the temperatures required by the standard tests for colorfastness to washing and dry-cleaning, it is stated.

Also available for use in all Launder-Ometers are new one-pint stainless-steel specimen containers which may be used as a substitute for the one-pint glass jars.

All Launder-Ometers now in use may be equipped with the new quick-release-type jar-holding fixture instead of the previously used spring clamps and wing nuts. This new fixture holds from one to five specimen containers of the same type and is adjustable to accomodate the high-pressure metal containers, one-pint metal containers, one-pint glass jars or the 3½ × 8″ metal specimen containers and adapters.

Complete literature and prices are available from Atlas Electric Devices Co upon request.

•

Velvacrest L

Crest Chemical Corp, 225 Emmet St, Newark, NJ, has announced a new development in the field of cation-active softeners, which it recommends specifically for synthetic fabrics. Velvacrest L is described as a snow-white, stable liquid emulsion which is chemically a new type stearic acid amine compound in pure state. It reportedly contains no emulsifying agents, no solvents, no polyethylene, no waxes and no adulterants of any type. The product is said to permit ease of handling since the softener can be added directly to the bath where it is to be used. Reportedly soluble in ice water, Velvacrest L, it is claimed, answers a need long sought for by finishers, namely, a highly effective cationic softener that can be used directly without preparation.

Velvacrest L assures a durable soft, lofty hand with maximum draping qualities for all synthetics, it is claimed. It can be used on whites with no yellowing and on colored goods with no alteration of color- or lightfastness of dyed goods, the mauufacturer states. It reportedly exhausts fully from solutions, and shows no discoloration on pressing, curing or aging of goods.

Ultra Lumatex

Putnam Chemical Corp, Beacon, NY, has announced a new oil-in-water printing system designated as Ultra Lumatex, which, it claims, incorporates all necessary resins in the Lumatex color, combining simplicity of operations and better fastness than heretofore possible with pigment printing, particularly fastness to crocking and drycleaning.

According to Putnam, Ultra Lumatex is competitively priced and, because of its good printing properties, greater yield is possible, which makes Ultra Lumatex even more interesting from money value point of view.

•

Scherbro Carriers; Schercobinder Binders

Scher Brothers, manufacturing textile chemists of Clifton, NJ, has announced the introduction of its new series of Scherbro carriers and Schercobinder binders.

Six types of Scherbro carriers are now offered for sale. They are said to be cold-water dispersible and non-toxic, to have freedom from crystallization or precipitation, and to have stability over a long period as they reportedly have a shelf life of nine months and longer. Scher Brothers states that the line was developed to cover every possible need, use, and operation in connection with both dyeing and printing. They are said to help give a clean color, sharpness of print, and exceptional color value. Scher officials claim that this is the most complete line available. These carriers are said to be especially useful for Dacron and Kodel polyester fibers, which are very hard to dye without a carrier. They are also widely used for dyeing of Arnel triacetate fabrics, it is stated.

The Schercobinder pigment binder is said to meet the great demand for a binder for oil in water printing and padding which is simple to use. It reportedly does a "one-unit" job, ie, all that is necessary is for a thickener and solvent to be added. Unusual fastness to laundering is said to be obtained. Most colors tested showed zero, or a crock so close to zero that it was negligible, it is claimed. They reportedly show excellent results with Dacron polyester fiber, Orlon acrylic fiber and other hydrophobic fibers, without affecting the hand.

The new carriers and binders may be used with cotton, rayon, silk, linen and all types of natural fibers, as well as the synthetics, it is stated.

The Finest Polyethylene Emulsion on the Market

Moropol 700

Moropol 700 performs wonders in crush resistants, wash and wear formulations, and in shrink control finishes. Here are some of its valuable features.

Non-Yellowing Neither the emulsifier nor the polyethylene contain nitrogen. Fabric will not yellow with age or heat.

Improves Fabric The use of Moropol 700 increases tear and tensile strength — and seam efficiency — in resin treated fabrics. It eliminates embrittlement, increases abrasion resistance, and improves crease recovery and hand.

100% Effective Moropol 700 contains no waxes or loading agents. Requires less to do the job.

Moropol 700 is compatible with acids, alkalies, cationics, and metal salts. It is miscible in water in all proportions — freeze/thaw stable — and has a particle size of less than 1/10 micron. Moropol 700 will not separate, settle-out, or cause rancidity in storage.

The abrasion resistance, durability, sewability, and glove-like touch of Moropol 700 recommend its use as a self-finish on sheetings and many other fabrics.

Moropol 700 is the leader in the fine family of Moretex Polyethylene Emulsions.

For the best for any purpose call Moretex.

MORETEX *Chemical Products*, INC.
ESTABLISHED 1908
MANUFACTURING CHEMISTS SPARTANBURG, SOUTH CAROLINA

Treat Your Wash-and-Wear to

"POL-E-TEX"

THE *Permanent* FINISH THAT PUTS MORE *Sales Appeal* IN WASH -AND WEAR GARMENTS!

"POL-E-TEX" . . . for natural or synthetic fabrics. Assures better lubrication, hand and drape. Improves the tear strength, crease recovery and abrasion resistance of crease-proofing resins. Reduces needle cutting.

Other advantages include high resistance to wear and dirt pick-up; no chlorine retention; no discoloration; no aging rancidity; requires no curing.

Just Try it!

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Meccanotex Screen Printer

Screen printing on tables on knitted fabrics is a familiar process. However, printing with automatic equipment on lightweight knitted fabrics, for example, 15-denier nylon and lighter, has met with difficulties in the past since this fabric has a tendency to roll up and mark off.

Reggiani of Bergamo, Italy, is one manufacturer of automatic screen printing machines which has helped make it possible to print these knitted fabrics on high-production automatic equipment and achieve high-quality standards.

The Reggiani machine, known as the Meccanotex, is said to be complete in every detail including motors and dryer and it is now claimed to be the fastest machine on the market. It is said to be comparatively easy to handle.

Reggiani is one of the largest commission finishing houses in Europe with a very large, modern bleaching, dyeing and printing plant. The Meccanotex was designed by the firm for its own use.

Reggiani reportedly is in a position to give all technical assistance in starting up operation of this equipment. There are said to be considerable numbers of these machines now in operation in the US.

Reggiani screen printing machines are represented in this country by Lendt and Co, Inc, 535 Fifth Ave, New York 17, NY.

•

Devlex 130 and A515

Two new functional polymers with specific applications in textile processing have been developed by The Dow Chemical Co.

Dow said the new resins, Devlex 130 and Devlex A515, offer particular advantages in textile dyeing and sizing processes.

Devlex 130, a nonionic polymer, is reportedly capable of accepting soluble anionic and cationic dyes in the bath in competition with the textile fiber, and partial or total hold-off of the stripped dyes can be regulated by polymer concentration, it is claimed.

According to Dow, Devlex A515 has been formulated successfully into effective sizes and stiffeners and displays utility as a spot sizing for collars and cuffs. When sprayed, it reportedly dries rapidly to a tack-free film which imparts a starched feel but does not yellow on aging.

Further information and samples may be obtained from Dow's Technical Service and Development Department, Midland, Mich.

The girls pictured above are twins. The twin on the left is said to be holding and to be illuminated by a standard cool white fluorescent lamp while her sister on the right is holding and being illuminated by Sylvania's new Natural White fluorescent lamp. Both lamps are said to be of identical wattage and to be equally distant from the twins.

"Natural White" Fluorescent Lamp

A new fluorescent lamp that is claimed to put more "warmth and appeal" into the colors of merchandise on display in stores, and even make people "look more attractive," was announced recently by Sylvania Electric Products Inc, a subsidiary of General Telephone & Electronics Corp, 730 Third Ave, New York 17, NY.

The new lamp, known as the "Natural White", was created primarily for use in stores, restaurants, and public gathering places.

Explaining that the phosphor coating inside a fluorescent lamp determines how clear and true any color will appear under its light, a Sylvania official said that up until now white fluorescent lamp phosphors have not radiated enough red light energy to satisfy the requirements of color revelation considered to be optimum by many leading authorities on merchandising.

Sylvania's lighting engineers reportedly have created a new phosphor which more than doubles the amount of energy present in the red portion of the spectrum. This new phosphor also is said to provide better blends of all colors in the fluorescent radiant energy spectrum. Thus, reds, pinks, and complexion tones are said to look "more rich and natural" under the light of the Natural White fluorescent lamp.

Sylvania Natural White fluorescent lamps now are available in wattage ranges from 15 through 73 in Standard Start, Rapid Start, and Slimline Instant Start types. The lamps are currently in production and are available for immediate distribution.

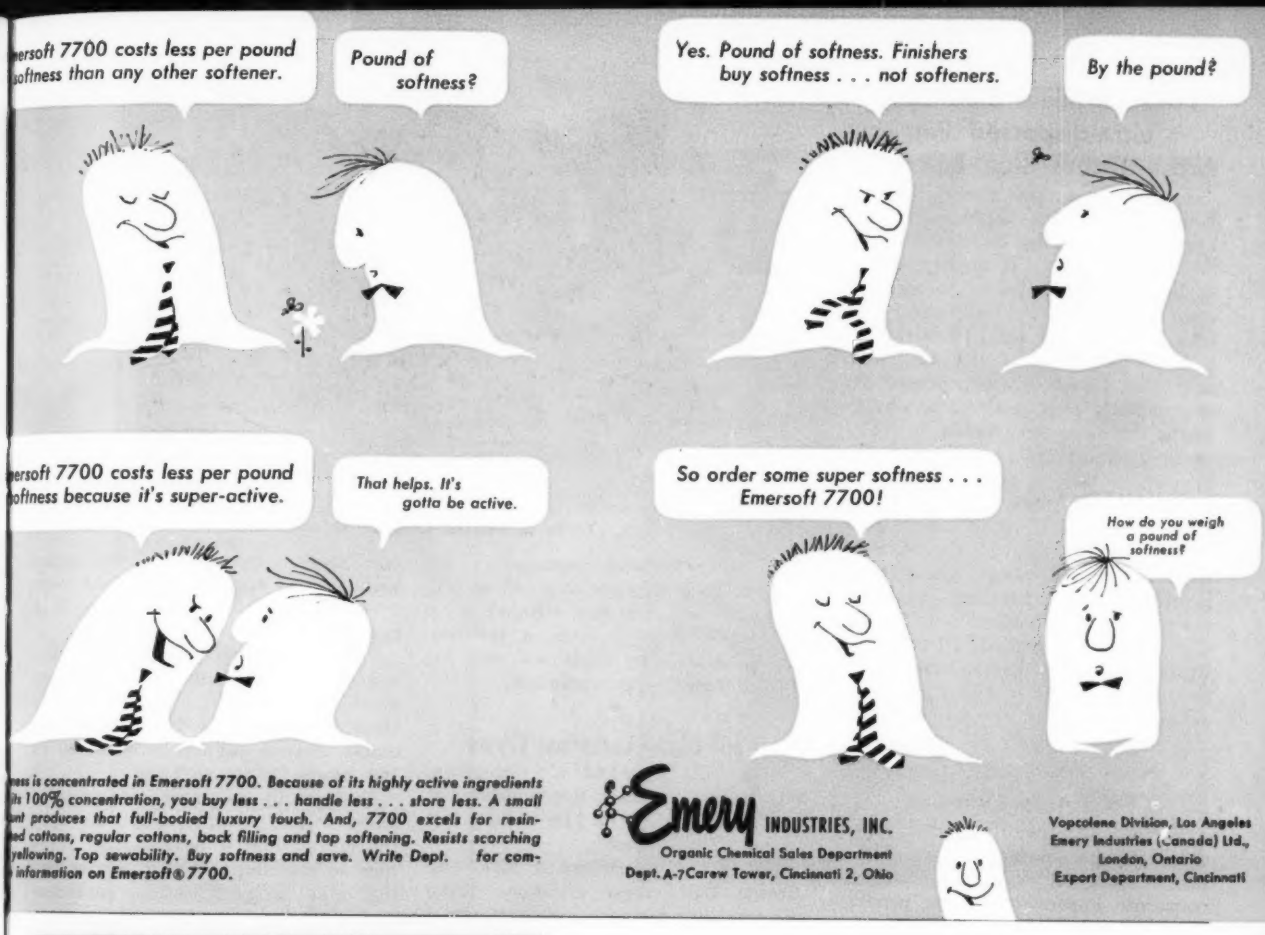
New Design Rotary-and-Washing-Type Dyeing Machine

Venango Engineering Co, Philadelphia, Pa, has developed a combination dyeing and washing machine based on the rotary dyeing machine principle except that the cylinder is an open-pocket type.

A variable speed drive reportedly provides the speed change necessary in the cylinder rpm to provide the additional agitation required for washing action. The rpm of this cylinder can be varied anywhere within the range of 6 to 25 revolutions, it is claimed, and an adjustable timer is also incorporated into this unit to allow reversal adjustment as desired.

The value of this unit is said to be that it provides flexibility for the washing cycle and dyeing or bleaching cycle in subsequent operations without handling between processes. It is suggested that this type machine will be of interest to sweater dyers and hosiery wet processesors due to its dual role. The variable speed drive is expected to be of value in processing hose made of stretch yarns, since increased cylinder speed is required to obtain the additional action necessary to successfully process this material. A machine of this type can also be used by tape and narrow fabrics processors for their dyeing and bleaching operations.

These machines are of the same construction as the new Venango rotary dyeing machine with outboard bearings as first introduced to the hosiery dyeing industry by this organization. They can also be obtained in type 316 stainless steel as well as the standard type 304 stainless-steel construction.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Foron Brilliant Blue GFLN ultra-dispersed Pat; Artisil Direct Blue BSR New

A new blue dye, Foron Brilliant Blue GFLN ultra-dispersed Pt, has been announced by Sandoz, Inc. As its name implies, it is brighter in shade, as well as faster to light, in comparison with its companion product, Foron Blue GFL ultra-dispersed Pat. It is stated that Foron Brilliant Blue GFLN ultra-dispersed Pat also affords improved dispersibility, and is therefore very stable to dyeing at the boil. It is recommended by Sandoz for use on acetate, triacetate, and polyester fibers.

Artisil Direct Blue BSR New is an improved blue dye in the disperse class for use on acetates and other synthetic fibers. Fastness properties are said to be identical with a previous product, Artisil Direct Blue BSR, but the new product reportedly shows improved dispersing properties as well as significantly less tarring.

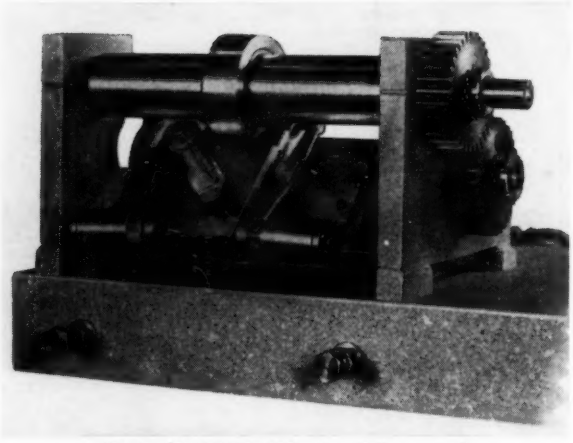
•

New Features Added To Turbo Crimper

Turbo Machine Company, Lansdale, Pa, has redesigned its Model DC Crimper for synthetic tow to incorporate improvements for producing a superior crimp.

Air cylinders on each side of the delivery gate are said to insure proper fiber infeed. A third air cylinder controls the pressure in the stuffing box for required crimp. An adjustable stop holds minimum and maximum roll openings.

Crimper rolls are four inches in diameter. They are available in widths from 0.25 inch to six inches.



Turbo Model DC Crimper, delivery end

The complete unit reportedly adjusts to accommodate any roll width.

Tow is fed into the crimper at a 45° angle directly from a lead-on roll. Double and triple tow can be run in continuous operation.

•

Two New Lanafast Dyes

Althouse Chemical Co, Reading, Pa, has announced the addition of two new colors to its line of Lanafast premetallized dyes.

Designated as Brown 4 RFL and Brown DBL these additions bring the total number of colors now available to nine. Previously announced colors are Yellow RFL, Orange RDL, Bordeaux KLL, Rubine BFL, Violet BBL, Navy NFL, and Black NBG.

The new Lanafast dyestuffs are said to be applicable to wool, nylon, Creslan, Zefran and Acrilan fabrics as well as mixtures and combinations of these fibers. The Lanafasts have been found especially suitable for upholstery, carpets, mens and ladies suitings and sportswear fabrics over a wide range of fashion shades, it is claimed.

Typical fastness properties of the new colors are said to range from good to excellent, with a Fade-Ometer rating of 7-8, ie, an appreciable change occurs between 80 to 160 hours.

Fastness to sea water, acid perspiration, water, chlorine, and cross dyeing is rated at 5 (excellent). Fastness to washing at 140°F, dry crocking, alkaline perspiration, carbonizing, and peroxide (cotton) is rated good to excellent (4-5). Fastness to wet crocking and peroxide (wool) is good (4).

Lanafast premetallized dyes may be used in conjunction with each other for the production of compound shades since they have similar dyeing and fastness properties. Application of these dyestuffs is carried out with standard application procedures.

NAMES IN THE NEWS

Dudley

Frank H Dudley recently joined the technical-sales staff of Southern Dyestuff Company.

Prior to taking his present position, Mr Dudley was for ten years on the technical staff of the dyestuff department of E I duPont de Nemours & Co, Inc. He will make his headquarters in Charlotte, NC.

Eureka Printing Co, Clifton, NJ, has announced the appointment of *Irving P Mintz* as general manager, *Robert L Wilkey* as superintendent, and *Kenneth W Fraser* as vice president.

•

Philip D Caine, formerly New England manager for Becco Chemical Division of Food Machinery and Chemical Corp, has been promoted to sales promotion manager for the Division, with headquarters in New York.

In his new assignment, Mr Caine will have charge of Becco's advertising and sales promotion activities, including market-development for new products and new applications of Becco's peroxygen chemicals.

Izzo

Raphael Izzo has joined the staff of the United States Testing Company, Inc.

Mr Izzo will supervise a number of fabric inspection programs. He has had wide experience as a designer, stylist, and laboratory director in the textile industry.

Polymer PRODUCTS

YARN PREPARATION

Nylon Size (Polyfilm—TS 20)
Dacron Size (Polyfilm—D1)
Spun Blends (Polyfilm B2)
Loom Finish Size (Polyfilm L)
Fugitive Tints (Rinse Free Colors)
Softeners, Waxes, Lubricants, Plasticizers, Gelatines, Penetrants, Soluble Crayons

PRINTING-ROLLER and SCREEN

GUMS and THICKENERS
Water Soluble (Polygum 220, 225, 230, 260, 261)
Prepared Type (Polyprint SM 500)
EMULSION BASE THICKENERS FOR ALL DYESTUFFS

SOFTENERS

SOFTENERS

Cations (Polysoftener 411, 810)
Anions (Polysoftener 346, 1525, 1610)
Non-ionic (Polysoftener 880)
Sewing Lubricant C554
Polyflex 120, 910
Polylube P (Polyethylene Emulsion)

WATER REPELLENT

Polyropel WT (Durable Type)

RESINS

Water Soluble (Polybond 20, 60, 90, BF)
Thermo Plastic (Polyvin Series)
Thermo Setting: Polyresin FS (Cyclic Urea Formaldehyde); Polyresin A850

WEIGHTERS

Polyweighter P
Polyweighter 6U

PIGMENT COLORS*

Impad: Concentrates for Pad Dyeing
Imperse: Non-ionic and Anionic Aqueous Dispersions

PIGMENT BINDERS

Binder Concentrate 1717
Low Crock Binder (1559, 1718)

ADHESIVES

Screen Table Adhesive W70
Screen Machine Adhesive 1767

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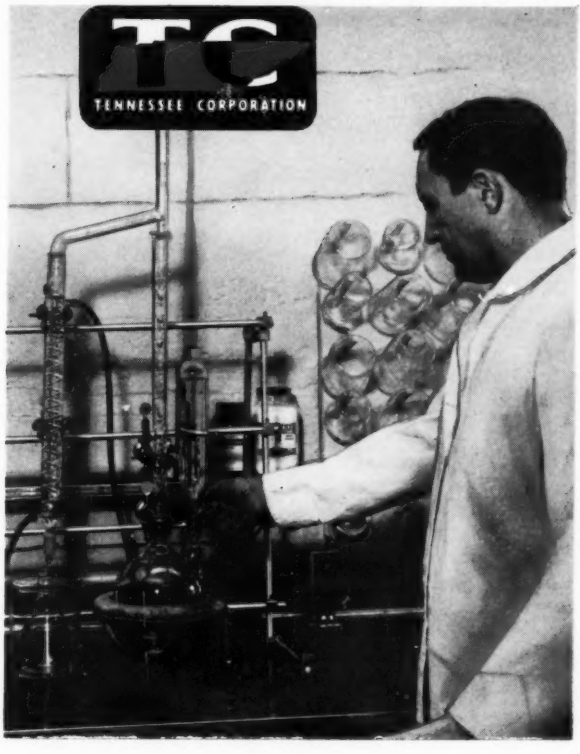

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Holt

Marshall

A recent personnel expansion at Wica Chemicals, Inc, Charlotte, NC, is responsible for the addition of *Roy Holt* and *R M Marshall* to the laboratory staff.

Mr Holt is active in Wica's development program as a research chemist.

Mr Marshall is working in precision quality control for Wica's commercial specialty chemical products.

•

Minneapolis-Honeywell Regulator Co has appointed new general managers for two of its Industrial Products Group divisions.

Kenneth Brierley assumes responsibility for expanding activities of the Fall River, Mass, Division, a producer of electronic process instrumentation. *John H Hagen* succeeds to Mr Brierley's former post as head of the Rubicon Division, which manufactures test and calibration instruments.

The personnel changes send *George Hoffmeister*, general superintendent of the Fall River unit since its inception in 1957, to the Datamatic Division in Boston in a staff assignment.

Mr Brierley joined Honeywell's Brown Instruments Division in 1946 and has served in a number of executive and managerial capacities. Mr Hagen has been with the company since 1933, first in Minneapolis and since 1940 in Philadelphia. Among his many assignments was that of industrial relations director for Brown Instruments.

•

Appointment of *Jerome E Levy* as sales manager, Textile Chemicals Division, has been announced by Sonneborn Chemical and Refining Corp.

Mr Levy succeeds *Lux Sonneborn*, who is retiring from active participation in the company, but who will remain as a consultant to Mr Levy.

Mr Levy was assistant manager, Textile Chemicals Division, and previously assistant to the manager of sales, White Oils Division.

Sasseen

Putnam Chemical Corp has announced the appointment of *Albert E Sasseen* as technical sales representative for the Atlanta territory. Mr Sasseen has been associated with textile dyeing & finishing for the past 23 years.

Previous to joining Putnam Chemical, Mr Sasseen was a superintendent of finishing with Dublin Finishing Co, Dublin, Va; plant manager with Fontaine Converting Works, Martinsville, Va; and Bishopville Finishing Co, Bishopville, SC.

•

The board of directors of Century Chemical Corp has announced that *Emmons W Blodgett*, a vice president of Stone & Webster Securities Corp, has been appointed executive vice president and chief executive officer of Century on a temporary basis. *Theodore S Hodgins*, the former president, has been elected chairman of the board.

•

Pennsalt Chemicals Corp has announced the establishment of a new Atlanta sales region for its Industrial Chemicals Division. A new regional office in the company's recently completed plant and offices at Hapeville, Ga, on the southern perimeter of Atlanta replaces the former Southeastern District Office in Decatur, Ga.

The seventh in Pennsalt's regions for the Industrial Chemicals Division, the Atlanta Region comprises eastern Tennessee and the states of North Carolina, South Carolina, Georgia, Florida and Alabama.

Robert W Wurst, former manager of the Southeastern District Office, has been named regional manager. A member of the Pennsalt Industrial Chemicals Division's sales organization since 1951, he will have his headquarters in Atlanta. He has been serving Pennsalt customers in the Southwest since 1954.

The company also announced that *Donald W Waterman*, an Industrial Chemical Division sales representative since 1952, will serve the eastern portion of the region. He will continue to work out of Charlotte, NC.

Ehman

Neuville

A reorganization of two departments within the Chemical Products Division of Ansul Chemical Company, Marinette, Wis, has been announced.

Philip J Ehman has been appointed manager of the Research Department, which will be responsible for technical research and for long-range market research. Other members of the department are *George D Stevens*, *Robert M Moyerman* and *William A Peters*.

Morris L Neuville has been appointed manager of the newly created Commercial Development Department. It will bring together the functions of process development and market research and development. *Edward N Heger* will head process or pilot plant development and *Robert N Gottschalk* will have charge of the market research and development work of the department.

•

J C Malone has been appointed assistant to the general manager of the Silicones Division, Union Carbide Corp. Mr Malone has moved to his new post from the Institute, W Va, plant of Union Carbide Chemicals Co, where he was assistant superintendent.

In his new duties, Mr Malone will be located in New York, working on special assignments for *R S Abrams*, general manager, involving all aspects of the silicones business.

At the same time, it was announced that *C T Schieman Jr* has been appointed general sales manager for the Division, and *P S Manchester*, assistant general sales manager.

Also, *R S Wishart* has been appointed manager, product marketing, reporting to the general manager.

Other appointments include that of *T F Hart* as product manager of fluids, and *J H Lorenz* as product manager of resins and water repellents.

Changes in the field sales group have been announced with the appointment of *T J Fontelieu Jr* as Eastern region manager; *F S Phinney* a Southern region manager; and *C I Tripp* as region product manager, Eastern region.

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Patton

E L Patton, formerly of Southern Regional Research Laboratory, has joined the Textile Section of Shell Chemical Company's Technical Service Laboratory in Union, NJ.

The addition of Mr Patton to Shell Chemical's staff at the New Jersey laboratory is part of the company's expansion of activities in the textile field. Shell's products currently used in various processing and finishing operations in the production of fabrics include hydrogen peroxide epichlorohydrin, Eponite ® 100, and glycerine, as well as alcohol and ketone solvents.

While at Southern Regional Research Laboratory, Mr Patton was a Canvas Products Association International Fellow and worked extensively on mildewproofing and rotproofing problems.

●

Eldred K Olson has been named chief chemist of the A E Staley Mfg Co's quality control laboratory, succeeding *Lisle R Brown,* who retired Sept 1 after 36 years with the Decatur, Ill, firm. Mr Olson has been a senior analytical chemist in the control laboratory since 1955.

Richard E Schuman has been appointed manager of operations and planning in Staley's research division. His duties include research division financial and organization planning, and administering service functions of the company's new research center now nearing completion at Decatur. He was formerly technical service administrator.

●

Six new research fellows have been appointed by Textile Research Institute for the academic year 1960-1961. TRI research fellows are regular graduate students at Princeton Univ working toward their doctorate degree.

One of the new appointees, *Elliot B Grover, will* major in mechanical engineering in his studies at Princeton. Mr Grover received BS and MS degrees in mechanical engineering from North Carolina State College. *John R Aspland,* who received BSc and MSc degrees in color chemistry from the Univ of Leeds in England, will major in physical chemistry. Also majoring in physical chemistry will be *George T Davis,* who received a BS degree in chemical engineering from Cornell Univ, and *Gerd N La Mar,* who received a BS degree in chemical engineering from Lehigh University. *Volker D Arendt,* who holds a BS degree in textile chemistry from North Carolina State College. and *Jonathan B Rivlin,* who received a BS degree in chemistry and dyeing from Philadelphia Textile Institute, will major in organic chemistry at Princeton.

These six appointees will join eight advanced TRI Research Fellows who will continue their studies during the forthcoming academic year. *William Freeston* and *John A Regalbuto* are advanced graduate students in mechanical engineering. *Thomas J Cochrane Jr, Robert P Teulings* and *Gerald Bjorge* are continuing their studies in chemical engineering. *Donald D Kasarda* and *Henry A Saffer* are majoring in physical chemistry, while *Leonard Lifland* is pursuing his studies in organic chemistry.

The total of fourteen TRI Research Fellows who will be active this fall constitutes one of the largest groups of students in the history of the TRI educational program.

Dames

Appointment of *Robert P Dames* to the New York area office of Emery Industries, Inc has been announced.

Mr Dames will handle Emery's complete line of fatty acids and hydrogenated glycerides in the territory including north New Jersey, central and northwestern Pennsylvania, central New York State, and western Maryland.

Mr Dames has been active in chemical sales work in the Greater New York area since 1954. Prior to joining Emery, he was a sales representative with Lotte Chemical Coporation.

●

William R Daragan has been named technical service representative for the Chlor-Alkali Division of Food Machinery and Chemical Corp. He will be located in the Division's New York headquarters.

Mr Daragan, who has been with FMC since 1953, will consult with the Divisions's field sales force on technical problems including product quality, engineering surveys on product storage and handling, and container improvements.

●

Albert C Zettlemoyer, professor of chemistry at Lehigh Univ, served as chairman of the American delegation to the Third International Congress of Surface Activity held Sept 12-17 at Cologne, Germany.

Dr Zettlemoyer, who serves as director of the National Printing Ink Research Institute at Lehigh University, presented two papers at the Congress.

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Wica Chemicals' youth development program shares promising talent with North Carolina educational institutions. G Paul Logue will major in chemical engineering at N C State. Carl L Sigmon has business administration as his target at the University of N C. Textile chemistry at N C State holds the future for William H Parr and Paul R Drossin. All plan careers in the South's textile industry.

R W Daniels has been named manager of services, succeeding *John M Fasoli,* who has been named manager of commercial operations, for the Organic Chemicals Div of American Cyanamid Co.

In his new capacity, Mr Fasoli will be responible for coordinating activities of the division's commercial development department, and the six commercial departments which include dyes, explosives and mining chemicals, textile chemicals, rubber chemicals, petrochemicals, and intermediates. He will be located at division sales offices in Bound Brook, NJ.

Mr Fasoli, from 1958 to the present time, has been manager of services for the division.

As manager of services, Mr Daniels will have responsibility for coordinating all activities of the division's purchasing, legal, public relations, traffic, personnel services and general services departments. He will be located at division offices in Bound Brook, NJ. He was assistant director of sales for the Organic Chemicals Division for three years prior to being appointed manager of services.

Maxwell R Kleeman has been promoted to district manager, Newark (New Jersey) District Sales Office of Union Carbide Chemicals Company. *Carl D Preston* has been appointed assistant district manager for Newark, filling the position previously held by Mr Kleeman. Mr Kleeman has been with the Company since November, 1945, and Mr Preston, formerly assistant district manager in the New York area, joined Carbide in June, 1950.

•

Latest recipients of scholarships at North Carolina State College's School of Textiles have been announced as follows:

David S Winstead, a junior, is the winner of the $500 Burlington Industries Scholarship.

John L Nash, president of the Phi Psi fraternity chapter at N C State, has been named winner of the $500 American Viscose Corp Scholarship.

Joseph G Blair and *Danny R Allen* are the first recipients of the Sonoco Products Co Scholarships, worth $500 each. Both have entered the freshman class this fall.

OBITUARY

ROBERT REINER

ROBERT REINER, founder and president of Robert Reiner, Inc, Weehawken, NJ, died on August 22. He was 80.

Dr Reiner came to this country from Germany in 1899 for the Vomag Company in Chemnitz (Saxony) to install their Schiffli embroidery machines; only a few years later, he became an independent agent for Vomag and imported a total of approximately 1,600 of these giant machines into the United States.

Dr Reiner was granted an honorary degree in economics from the ancient university of Heidelberg in 1922.

The firm bearing his name has become one of the leading manufacturers and importers of textile machines for the knitting and weaving trades.

•

A J MARTINELLI

ANTHONY J MARTINELLI, 42, a chemist at the Central Research Laboratory, General Aniline & Film Corp, Easton, Pa, died August 3 at Memorial Hospital, New York.

Mr Martinelli, a native and resident of Easton, was employed by General Aniline & Film Corporation for 13 years. He started with the company as a laboratory technician, and was promoted to the position of junior chemist on the technical staff in 1952.

•

D J BOHNY

DONALD J BOHNY, former partner in Modern Central Dyers & Finishers, Inc, Paterson, NJ, died recently at the age of 32.